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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

BOB STUMP - CHAIRMAN
GARY PIERCE
BRENDA BURNS
BOB BURNS
SUSAN BITTER SMITH

IN THE MATTER OF THE APPLICATION OF ARIZONA WATER COMPANY, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR ADJUSTMENTS TO ITS RATES AND CHARGES FOR UTILITY SERVICE FURNISHED BY ITS NORTHERN GROUP AND FOR CERTAIN RELATED APPROVALS.

DOCKET NO. W-01445A-12-0348

NOTICE OF FILING STAFF'S DIRECT TESTIMONIES

The Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission") hereby files Direct Testimonies of Jeffrey Michlik, Katrin Stukov and John Cassidy in the above-referenced docket.

RESPECTFULLY SUBMITTED this 28th day of February, 2013.

Arizona Corporation Commission
DOCKETED
FEB 28 2013
DOCKETED BY

Wesley C. Van Cleve
Scott Hesla
Attorneys, Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007
(602) 542-3402

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Copy of the foregoing mailed this _28th_ day of _February___, 2013, to:

Steven A. Hirsch
Stanley B. Lutz
BRYAN CAVE, LLP
Two North Central Avenue, Suite 2200
Phoenix, Arizona 85004-4406

Robert Geake, Vice President and
General Counsel
ARIZONA WATER CO.
P.O. Box 29006
Phoenix, Arizona 85038

Daniel W. Pozefsky
Chief Counsel
Residential Utility Consumer Office
1110 W. Washington Street, Suite 220
Phoenix, Arizona 85007

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BEFORE THE ARIZONA CORPORATION COMMISSION

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DIRECT

TESTIMONY

OF

JEFFREY M. MICHLIK

PUBLIC UTILITIES ANALYST V

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

FEBRUARY 28, 2013

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EXECUTIVE SUMMARY
ARIZONA WATER COMPANY
NORTHERN GROUP
DOCKET NO. W-01445A-12-0348

Arizona Water Company ("Company" or "AWC") is a certificated Arizona public service corporation that provides water service throughout the State of Arizona. The Company's water systems are assembled into the Northern, Eastern, and Western Groups. The Northern group is comprised of the Navajo and Verde Valley water systems; the Eastern group is comprised of the Superstition, Cochise, San Manuel, Oracle, SaddleBrooke Ranch, and Winkleman water systems; the Western group is comprised of the Pinal Valley, White Tank and Ajo water systems. The Arizona Corporation Commission granted the Company's most recent rate increase in Decision No. 71845, dated August 24, 2010.

On August 1, 2012, the Company filed the instant rate application for its Northern Group: Navajo water system (comprised of the Lakeside and Overgaard sub-systems); and Verde Valley water system (comprised of the Sedona, Pinewood and Sierra Rimrock sub-systems). The application was found sufficient on August 30, 2012.

The testimony of Jeffery M. Michlik presents the Utilities Division ("Staff's") recommendations in the areas of rate base, operating income, rate of return, revenue requirement, distribution system improvement charge ("DSIC"), arsenic cost recovery mechanism ("ACRM"), and Off-site facilities hook-up fee tariff.

Rate Application:

Navajo Water System

The Company-proposed rates, as filed, produce total operating revenue of $4,373,360, an increase of $778,281, or 21.65 percent, over test year revenue of $3,595,079 to provide a $902,842 operating income and a 9.11 percent rate of return on its proposed $9,911,050 fair value rate base ("FVRB") which is its original cost rate base ("OCRB").

Staff recommends rates that produce total operating revenue of $4,198,543, an increase of $534,713, or 14.59 percent over the Staff-adjusted test year revenue of $3,663,830, to provide a $471,338 operating income and an 7.9 percent return on the $10,065,911 Staff-adjusted FVRB and OCRB.

Verde Valley Water System

The Company-proposed rates, as filed, produce total operating revenue of $8,851,072, an increase of $2,051,496, or 31.42 percent, over test year revenue of $6,529,576 to provide a $2,380,736 operating income and a 9.11 percent rate of return on its proposed $26,134,793 fair value rate base FVRB which is its original cost rate base OCRB.

Staff recommends rates that produce total operating revenue of $7,981,938, an increase of $1,389,159, or 21.07 percent over the Staff-adjusted test year revenue of $6,592,779, to provide a $2,053,345 operating income and an 7.9 percent return on the $25,991,704 Staff-adjusted FVRB and OCRB.

Other items:

Staff recommends that all approved tariff charges billed to a customer should have a line item on the bill that clearly defines the charge by name and the dollar amount associated with that charge, for example, a charge for reconnection should be listed as a line item with the appropriate fee, rather than listed as a balance forward amount.

Staff recommends that the Company bill per the approved tariff and bill in units of 1,000 gallons for all Groups and water systems.

Staff recommends that the Commission authorize an arsenic cost recovery mechanism ("ACRM") for the Company that parallels the ACRM process previously adopted. That ACRM process requires the Company to obtain authorization of an ACRM in the context of a general rate case, and to subsequently apply for approval of up to two ACRM surcharges. Each surcharge request/application is subject to review and separate Commission authorization.

Staff recommends application of ACRM surcharges on a fully consolidated basis. That is, an ACRM surcharge should only apply to customers in the Company's system or sub-system where the treatment plant is physically connected unless the Commission has authorized fully consolidated rates (i.e., the same monthly minimum charges and commodity rates) for customers.

Staff recommends that the Commission adopt, in this case, whatever the outcome is in AWC's Docket No. W-01445A-11-0310 for its DSIC.

Staff recommends approval of the Company's Off-site facilities hookup fee tariff, subject to certain conditions (see testimony of Staff Engineer Katrin Stukov).

I. INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Jeffrey M. Michlik. I am a Public Utilities Analyst V employed by the Arizona Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Briefly describe your responsibilities as a Public Utilities Analyst V.

A. In my capacity as a Public Utilities Analyst V, I analyze and examine accounting, financial, statistical and other information and prepare reports and provide expert testimony based on my analyses that present Staff's recommendations to the Commission on utility revenue requirements, rate design and other matters.

Q. Please describe your educational background and professional experience.

A. In 2000, I graduated from Idaho State University, receiving a Bachelor of Business Administration Degree in Accounting and Finance, and I am a Certified Public Accountant with the Arizona State Board of Accountancy. I have attended the National Association of Regulatory Utility Commissioners' ("NARUC") Utility Rate School, which presents instruction on general regulatory and business issues.

I joined the Commission as a Public Utilities Analyst in May of 2006. Prior to employment with the Commission, I worked four years for the Arizona Office of the Auditor General as a Staff Auditor, and one year in public accounting as a Senior Auditor.

Q. What is the scope of your testimony in this case?

A. I am presenting Staff's analysis and recommendations regarding Arizona Water Company's ("Company" or "AWC") application for a permanent rate increase for its

Northern Group, which is comprised of the Navajo and Verde Valley water system. I am presenting testimony and schedules addressing rate base, operating revenues and expenses, revenue requirement, distribution system improvement charge ("DSIC"), arsenic cost recovery mechanism ("ACRM"), and off-site facilities hook-up fee tariffs. Katrin Stukov is presenting Staff's engineering analysis and related recommendations, and John Cassidy is presenting Staff's cost of capital recommendations.

Q. What is the basis of your testimony in this case?

A. I performed a regulatory audit of the Company's application and records. The regulatory audit consisted of examining and testing financial information, accounting records, and other supporting documentation and verifying that the accounting principles applied were in accordance with the Commission-adopted NARUC Uniform System of Accounts ("USoA").

Q. How is your testimony organized?

A. My testimony is presented in 11 sections. Section I is this introduction. Section II provides a background of the Company. Section III is a summary of consumer service issues. Section IV presents compliance status. Section V is a summary of the Company's consolidation proposal. Section VI presents an overview of the Company's filing and Staff's recommendations and a summary of Staff's rate base and operating income adjustments. Section VII presents Staff's rate base recommendations. Section VIII presents Staff's operating income recommendations. Section IX presents Staff's recommendation on the DSIC. Section X presents Staff's recommendation on the ACRM. Section XI presents Staff's recommendation on the off-site facilities hook-up fee.

II. BACKGROUND

Q. Please review the background of this application.

A. AWC is a certificated Arizona public service corporation that provides water service throughout the state of Arizona. The Company's water systems are assembled into the Northern, Eastern, and Western Groups. The Northern group is comprised of the Navajo and Verde Valley water systems; the Eastern group is comprised of the Superstition, Cochise, San Manuel, Oracle, SaddleBrooke Ranch, and Winkelman water systems; and the Western group is comprised of the Pinal Valley, White Tank and Ajo water systems. The Commission granted the Company's most recent rate increase in Decision No. 71845, dated August 24, 2010.

On August 1, 2012, the Company filed the instant rate application for its Northern Group: Navajo water system (comprised of the Lakeside and Overgaard sub-systems); and Verde Valley water system (comprised of the Sedona, Pinewood and Sierra Rimrock sub-systems).

III. CONSUMER SERVICES

Q. Please provide a brief history of customer complaints received by the Commission regarding the Company. In addition, please discuss customer responses to the Company's proposed rate increase.

A. A review of the Commission's Consumer Services database for the Company's Northern Group from January 1, 2010, to January 14, 2013, revealed the following:

2013 – One complaint (billing)

2012 – Sixteen complaints, (ten billing, two service, two quality of service, one disconnect, one construction). Six opinions related to the rate case application.

2011 – Twenty complaints (eight billing, four new service, five quality of service, one disconnect, one service, one rates and tariffs).

2010 – Nineteen complaints (eight billing, one deposit, one new service, seven quality of service, two disconnects).

Two complaints remain open pending investigation.

Q. Does Staff have any billing recommendations?

A. Yes. Per Arizona Administrative Code, Title 14, Chapter 2, R14-2-409.B.2.a thru R14-2-409.B.2.j, each bill for residential service is to contain minimum information. Per the above Rule, each bill should reflect all approved tariff charges. Staff recommends that all approved tariff charges billed to a customer have a separate line on the bill that clearly defines the charge by name and the dollar amount associated with that charge. For example, a charge for reconnection should be shown on a separate line from all other charges along with the appropriate fee and not as a composite charge such as – balance forward.

The Company bills its customers in "gallons per 100" units. Staff recommends the Company bill per the approved tariff and bill in units of 1,000 gallons for all Groups and Water Systems.

IV. COMPLIANCE

Q. Please provide a summary of the compliance status of the Company.

A. The ACC's Compliance database shows no delinquencies for the Company.

V. CONSOLIDATION

Q. Is the Company proposing to continue the consolidation process for its Northern Group water systems that began in its prior rate case?

A. Yes. The Company has been taking gradual steps toward consolidation. Decision No. 71845 fully consolidated the rates for the Lakeside and Overgaard water system which AWC now refers to as the Navajo System. Decision No. 71845 also consolidated the monthly minimum charges for the Sedona, Pinewood and Rimrock water systems which AWC now refers to as the Verde Valley system. AWC is requesting to fully consolidate the rates for the three systems in the Verde Valley system in this rate case by having uniform rates for both the monthly minimum charges and commodity rates.

Q. Is Staff in general agreement with the Company's proposal in this case?

A. Yes.

VI. SUMMARY OF FILING, RECOMMENDATIONS, AND ADJUSTMENTS

Q. Please summarize the Company's proposals in this filing for each of its systems in the Northern Group.

A. The Company proposes the following for each of its individual systems in the Northern Group.

Navajo Water System

The Company-proposed rates, as filed, produce total operating revenue of $4,373,360, an increase of $778,281, or 21.65 percent, over test year revenue of $3,595,079 to provide a $902,842 operating income and a 9.11 percent rate of return on its proposed $9,911,050 fair value rate base ("FVRB") which is its original cost rate base ("OCRB").

Verde Valley Water System

The Company-proposed rates, as filed, produce total operating revenue of $8,851,072, an increase of $2,051,496, or 31.42 percent, over test year revenue of $6,529,576 to provide a $2,380,736 operating income and a 9.11 percent rate of return on its proposed $26,134,793 FVRB which is its OCRB.

Q. Please summarize Staff's recommendations.

A. Staff recommends the following for each of the Company's systems in the Eastern Group.

Navajo Water System

Staff recommends rates that produce total operating revenue of $4,198,543, an increase of $534,713, or 14.59 percent over the Staff-adjusted test year revenue of $3,663,830, to provide a $795,207 operating income and an 7.9 percent return on the $10,065,911 Staff-adjusted FVRB and OCRB.

Verde Valley Water System

Staff recommends rates that produce total operating revenue of $7,918,938, an increase of $1,389,159, or 21.07 percent over the Staff-adjusted test year revenue of $6,592,779, to provide a $2,053,345 operating income and an 7.9 percent return on the $25,991,704 Staff-adjusted FVRB and OCRB.

Q. What test year did the Company use in this filing?

A. The Company's rate filing is based on the twelve months ended December 31, 2011 ("test year").

Q. Please summarize the rate base adjustments addressed in your testimony.

A. My testimony addresses the following issues:

<u>Post-Test Year Plant</u> – These true-up adjustments apply to both the Navajo and Verde Valley water systems. This adjustment increases Post-Test Year Plant by $257,446 and Accumulated Depreciation by $5,177 for the Navajo water system and increases Post-Test Year Plant by $633 and Accumulated Depreciation by $238 for the Verde Valley water system to true-up the Company's estimated Post-Test Year Plant costs to actual costs.

<u>Post-Test Year Land and Surveying</u> – This adjustment removes Post-Test Year Land and only applies to the Navajo water system. This adjustment decreases Post-Test Year Land by $25,334 and Water Treatment Equipment by $3,954 and Accumulated Depreciation by $113.

<u>Cash Working Capital</u> – These adjustments apply to both the Navajo and Verde Valley water systems, and adjust the cash working capital component of working capital based on Staff's calculation. These adjustments decrease cash working capital for the Navajo water system by $68,292, and the Verde Valley water system by $143,482.

Q. Please summarize the operating revenue and expense adjustments addressed in your testimony.

A. My testimony addresses the following issues:

<u>Weatherization revenue and expenses</u> – These adjustments apply to both the Navajo and Verde Valley water systems, and reverse the Company's pro forma adjustment for weatherization revenue and expenses. These adjustments increase revenue for the Navajo

water system by $68,751 and for the Verde Valley water system by $63,203; and increase expense for the Navajo water system by $15,249 and for the Verde Valley water system by $30,567.

Fleet Fuel Expense – These adjustments apply to both the Navajo and Verde Valley water systems, and adjust fleet fuel expense based on Staff's calculation of fuel costs using the most recent historical average. Staff deems no adjustment increase or decrease to fleet fuel expense for the Navajo or Verde Valley water systems is necessary.

Pumping and Transmission and Distribution ("T&D") Projected Expenses – These adjustments apply to both the Navajo and Verde Valley water systems, and reduce the Company's pro forma projections to a five-year normalized amount. These adjustments decrease T&D expenses for the Navajo water system by $21,629 and for the Verde Valley water system by $53,298.

Administrative and General Expenses – These adjustments apply to both the Navajo and Verde Valley water systems, and decreases administrative and general expenses. These adjustments decrease administrative and general expenses not related to the provision of water services for the Navajo water system by $2,311 and for the Verde Valley water system by $1,217.

Best Management Practices ("BMP") Expense – These adjustments apply to both the Navajo and Verde Valley water systems, and decreases expenses related to BMP costs. These adjustments decrease miscellaneous expenses for the Navajo water system by $18,750 and for the Verde Valley water system by $23,575.

Rate Case Expense – These adjustments apply to both the Navajo and Verde Valley water systems, and reduce rate case expense based on Staff's analysis. These adjustments decrease rate case expenses for the Navajo water system by $9,290 and for the Verde Valley water system by $21,235.

Depreciation Expense – These adjustments apply to both the Navajo and Verde Valley water systems. These adjustments increase depreciation expense by $10,076 in the Navajo water system and decrease depreciation expense by $1,689 in the Verde Valley water system, as a result of Staff's plant adjustments.

Income Tax Expense – These adjustments apply to both the Navajo and Verde Valley water systems. These adjustments increase test year income tax expenses for the Navajo water system by $25,134 and for the Verde Valley water system by $56,719.

Property Tax Expense – These adjustments apply to both the Navajo and Verde Valley water systems, and decreased test year income expenses for the Navajo water system by $29,212 and for the Verde Valley water system by $2,059 to reflect application of a modified version of the Arizona Department of Revenue's property tax methodology which the Commission has consistently adopted.

VII. RATE BASE

Fair Value Rate Base

Q. Did the Company prepare a schedule showing the elements of Reconstruction Cost New Rate Base?

A. No, the Company did not. The Company's filing treats the OCRB the same as the FVRB.

Rate Base Summary

Q. Please summarize Staff's adjustments to the Company's Northern Group water system rate bases shown in Schedules JMM-3 and JMM-4.

A. Staff's adjustments to the Company's rate base resulted in a net increase of $154,861, from $9,911,050 to $10,065,911 for Navajo water system, and a net decrease of $143,089 from $26,134,793 to $25,991,704 for Verde Valley water system, (See Schedules JMM-3 and JMM-4 for each of the system). Staff's recommendations result from the rate base adjustments described below.

Rate Base Adjustment No. 1 – True-up of Post-Test Year Plant (Navajo and Verde Valley water systems).

Q. Has Staff updated the Company's pro forma adjustments to include post-test year plant in rate base in both the Navajo and Verde Valley water systems?

A. Yes. Staff asked the Company through a data request to update its post-test year plant cost estimates to actual costs for each plant line item along with the associated depreciation expense. Staff updated the plant and accumulated depreciation balances to reflect the actual cost as reported by the Company.

Q. What is Staff's recommendation?

A. Staff recommends increasing Post-Test Year Plant by $257,446 and Accumulated Depreciation by $5,177 for the Navajo water system and increasing Post-Test Year Plant by $633 and Accumulated Depreciation by $238 for the Verde Valley water system to true-up the Company's estimated Post-Test Year Plant costs to actual costs, as shown in Schedule JMM-5 for the respective systems.

Rate Base Adjustment No. 2 – Post-Test Year Land (Navajo water system only)

Q. Why did Staff make an adjustment to Post-Test Year Land?

A. Based on the Engineering report and field inspection by Staff Witness Katrin Stukov, and review of Work Authorization 1-4923 the Company had survey work done on October 30, 2012, and November 21, 2012, to survey land for Well Site No. 5, at a cost of $3,954.[1] The Company also purchased adjacent land on November 29, 2012, at a cost of $25,334[2] in order to construct a future Arsenic Treatment Plant for Well No. 5. In addition, the Company on December 28, 2012, had American Fence Company install a six-foot high chain link fence at a cost of $10,321.[3] Staff has determined that the surveying cost related to the land and that the purchased land is not used and useful, and therefore, it should be removed from rate base.

Q. What about the cost of installing the fence around this property?

A. Consistent with Decision No. 71845, fences serve a useful purpose by protecting existing property from vandalism or theft, and offer liability protection to keep the public from being injured.[4]

Q. What is Staff's recommendation?

A. Staff recommends removing $29,288 (i.e., $25,334 and $3,954) in Post-Test Year costs related to the land surveying costs in the Navajo water system and associated depreciation of $113, as shown in Schedule JMM-6.

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[1] Amount includes AFUDC and overhead.
[2] Amount includes payroll and overhead.
[3] Amount includes payroll and overhead.
[4] See Decision No. 71845 page 10, line 9.

Rate Base Adjustment No. 3 – Cash Working Capital (Navajo and Verde Valley water systems)

Q. What basis did the Company use for its proposed cash working capital?

A. The Company's proposed cash working capital is based on a lead-lag study.

Q. Did the Company's lead-lag study include the same components as the lead-lag studies it produced for its Eastern and Western Group cases?

A. No. The Company's lead-lag study differs in this case from those it produced in the Eastern and Western Group in that it does not include interest expense as a component.

Q. Has the Company proposed to exclude interest expense in any of its prior rate cases?

A. Yes. In Decision No. 64282,[5] the Company's proposal to exclude interest expense from its lead-lag study was denied. The Commission stated:

"The Company collects cash used to make interest payments prior to the interest due date and, during the time Arizona Water has possession of these funds, they are a source of cost-free cash that can be used by the Company until making payments to creditors. Therefore, in accordance with the NARUC methodology, Staff claims that its lead-lag study properly included interest expense."

The Commission agreed that interest expense, which is a cash item available to the Company for payment to creditors prior to the interest due date should be included in a lead-lag study.

Q. Is Staff recommending including interest expense as a component of the lead/lag calculation in this case?

A. Yes.

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[5] Dated December 20, 2000.

Q. Did the Commission decision at the February 2013 Open Meeting[6] in the Company's Eastern Division rate case adopt interest expense as a component of the lead-lag study?

A. Yes.

Q. Has Staff recalculated the cash working capital adjustment with interest expense?

A. Yes. Staff recalculated cash working capital with Staff's adjusted expenses and the interest expense component. Staff's adjustments affect cash working capital for the Navajo water system by $68,292, a reduction, and for the Verde Valley water system by $143,482, a reduction, as shown in Schedule JMM-7 for the respective systems.

VIII. OPERATING INCOME

Operating Income Summary

Q. What are the results of Staff's analysis of test year revenues, expenses, and operating income?

A. Staff's analysis resulted in adjusted test year operating revenues of $3,663,830 , operating expenses of $3,192492, and operating income of $471,338 for Navajo water system, and adjusted test year operating revenues of $6,592,779, operating expenses of $5,383,130 and operating income of $1,209,649 for Verde Valley water system (See Schedules JMM-8 and JMM-9 for each of the system). Staff's recommendations result from the nine operating adjustments described below.

[6] The decision has not yet been signed.

Operating Income Adjustment No. 1 – Reverse Weather Normalization (Navajo and Verde Valley water systems)

Q. What pro forma adjustment is Mr. Reiker proposing regarding test year revenues and expenses?

A. Mr. Reiker claims that weather conditions in the test year were drier and warmer than usual, resulting in higher residential usage than usual, and therefore a pro-forma adjustment is necessary to adjust revenues and expenses to a more normalized year.

Q. Did Mr. Reiker propose a weather normalization adjustment for its Western or Eastern group?

A. No.

Q. Do water companies usually request weather normalization adjustments?

A. No. Staff is not aware of any recent rate case in which a normalization adjustment was proposed for a water company.

Q. Please explain Mr. Reiker's methodology?

A. Mr. Reiker uses a multiple regression time period of five years – specifically the 60 months beginning with January 2007 and extending through December 2011. The Company used base 10 logarithms of sales per customer as the dependent variable and the following as independent variables: (1) Palmer Drought Severity Index (PDSI), (2) coded month and eleven monthly indicators (takes on 0 or 1 value) to represent the twelve months of the year. The Company attempted to use the regression models to quantify the estimated effects of weather and the passage of time on use per customer. Then, the estimated effects are used by the Company to calculate its proposed weatherization adjustment and usage adjustment.

Q. Does Staff have any concerns with Mr. Reiker's statistical methodology?

A. Yes. The usage should have been normalized to the end of the test year, as Arizona uses a historical test year. Given that Arizona follows a historical test year and not a future test year the coded month value for the month to which usage is normalized should be no more than the coded month value associated in Mr. Reiker's database with the last month of the test year – December 2011. Mr. Reiker assigned a value of 59 to December, 2011 (the last of 60 months) when he opted to use 60 months of sequential monthly data with the count starting with zero (0) (i.e., 5 years include 60 months; where 0-11 are the 1st 12 months of his 5 –year data set, 12-23 are the 2nd 12 months; 24-35 are the 3rd 12 months; 36-47 are the 4th 12 months and 48-59 are the 5th 12 months – which in this case represents the test year of January-December 2011). Mr. Reiker repeated, and uses coded months 48-59 in his statistical analyses to represent January 2011 through December 2011. However, in calculating the "normalization adjustment" he has redefined – without notice or justification – the months January 2011 through December 2011 are reassigned the codes 60 through 71. This reassignment has the effect of overstating the adjustment to the Company's benefit. In effect, the reassignment results in using a future period (the coded months 60 through 71 represent the period January 2012 - December 2012 in the count) as the test year of 2011. By assigning the codes for the months in 2012 as the codes for 2011 2012, a future test year methodology was improperly employed.

Q. Has Staff recalculated the Company's results, correcting for the misassigned codes?

A. Yes. For the Navajo water system, the combined weather and usage normalization adjustment (Col D of the Company's Weather and Usage Normalization – Summary) has been overstated by 42 percent and for the Verde Valley water system the adjustment is overstated by 96 percent. The overstated adjustments would inappropriately increase rates if adopted by the Commission.

Q. Are there any other statistical problems with Mr. Reiker's weatherization adjustment?

A. Yes. For the Navajo water system, the independent variables for three of the months (February, April, and November) are not statistically significant as the P-Value is above 5 percent, and for the Verde Valley water system the independent variable for the month of February is not statistically significant. The effects of insignificant independent variables remain unquantified, such that one is unsure whether the independent variable increases or decreases the estimate of the dependent variable of interest.

Q. What is Staff's major concern with the use of statistics to justify revenue and expense pro-forma adjustments?

A. The results can be manipulated by data mining, such as re-running statistical models using different time periods, as was demonstrated in the Company's Eastern Group rate case. In similar fashion, the adjustments in this case can be significantly manipulated by using a different time periods, as will be explained further in Staff's transmission and distribution adjustment.

Q. What is Staff's recommendation?

A. Staff recommends reversing the normalization pro-forma adjustment and increasing revenue for the Navajo water system by $68,751 and for the Verde Valley water system by $63,203; and increasing expense for the Navajo water system by $15,249 and for the Verde Valley water system by $30,567.

Operating Income Adjustment No. 2 – Fleet Fuel Expenses (Navajo and Verde Valley water systems)

Q. What pro forma adjustment is the Company proposing for fuel costs?

A. The Company proposes a pro forma adjustment to increase fuel costs using the assumption that its fuel cost for the entire test year was equal to an average fuel price of $3.553 per gallon.

Q. What is Staff's recommendation?

A. Staff also recommends $3.553 per gallon. However, Staff does not agree with method used by the Company to arrive at this figure. Fuel costs are volatile and often are seasonal. Fuel prices varied from a low of $2.77 per gallon in November 2010 to a high of $3.77 per gallon in May of 2011. The current average at the end of January is $3.19 per gallon, and it is trending upward. To recognize the volatility and seasonality of fuel prices, a 12-month average is preferable to a single date to represent the average annual fuel costs. Staff used an historical average price of $3.553 based on a time period starting at February 2013 and running through the end of January 2013.

Operating Income Adjustment No. 3 – Pumping and Transmission and Distribution ("T&D") Projected Expenses (Navajo and Verde Valley water systems)

Q. What pro forma adjustment does the Company propose?

A. The Company proposes adjustments it refers to as normalization through the use of regression analysis which increases pumping and T&D expenses by $68,736 for the Navajo water system, and by $66,204 for the Verde Valley water system. The Company asserts that these adjustments are necessary to reflect that the test year level of pumping and T&D maintenance expenses were abnormally low and not representative of the level of costs that would be prudently incurred during normal economic and business conditions (which would include a proactive approach to reducing water loss). The Company claims that it has implemented a number of significant cost-cutting measures in response to the economic downturn beginning in 2008, including a focused reduction in the level of costs incurred in the maintenance of its pumping and T&D systems to a minimum level sufficient to maintain adequate and reliable service.

Q. **Has Staff conducted an analysis of the Company's regression models?**

A. Yes.

Q. **What is a regression analysis?**

A. Regression analysis is a statistical technique for determining "a line of best fit" for a set of data points. In this case, a simple regression model with a dependent variable "Expenses" (Y) and independent variable "Year" (X) is used to assess the association between the two variables. The Company has assumed expenses are growing linearly over time. Each year expenses will grow/fall by some fixed amount. Staff also used this assumption of linear growth in its review and analysis of expenses. Regression analysis allows estimation of the equation for the line specifying the relationship between expenses and time. The slope-intercept form of the line is $Y = m(x)+b$ (expenses = slope * year + intercept). In the equation, Y is the dependent variable (in this case expenses), X is the year, "m" is the slope of the regression line and "b" is the Y intercept of the regression line. In this analysis estimating "m" is the primary goal, because it represents the change in Y divided by the change in X, which in this case, represents the change in expenses each year. The slope "m" and intercept "b" are easily calculated with the use of the Excel regression tool. Using the relationship determined by regression, expenses (Y) can be estimated by entering the appropriate year (X).

Q. Does the Commission require Public Service Corporations to use a historical test year?

A. Yes, however companies can make pro-forma adjustments to actual test year results and balances to obtain a normal or more realistic relationship between revenues, expenses and rate base, based on the known and measureable costs. However, the T&D pro-forma expense adjustments are based on estimates and are not known or measureable.

Q. Has Mr. Reiker included projected costs that are not known and measureable into his T&D pro-forma adjustment for this case?

A. Yes. He has used a regression model and projected past the test year 2011 into the future years 2013, 2014, and 2015.

Q. Is this the same methodology that the Company used in the Eastern and Western Groups?

A. No, but the regression methodology used by the Company is similar. In the Eastern and Western Groups the T&D expense was compared to years. However, for this Northern Group rate case Mr. Reiker has elected to introduce the number of customers into the regression model to calculate a T&D expense per customer.

Q. What else is different about the Company's regression methodology in this rate case versus the methodology it used in the Eastern and Western Group rate cases?

A. In the current rate case Mr. Reiker uses historical data that goes back 20 years instead of going back 11 years as was the case in the Eastern and Western Groups.

Q. Does Staff have concerns with the Company's change in methods?

A. Yes. While using cost per customer versus expenses is a more logical basis for measuring changes in expense over time, using 20 years instead of 11 years of historical data introduces even more stale information that is unlikely to be relevant at this time. Further, changing approaches produces additional opportunities to data mine and identify regression models that best work to the Company's benefit.

Q. Does Reiker's use of 20 years versus the 11-year time frame he used in the Eastern and Western Groups rate cases result in a more favorable outcome (i.e., increase the amount of the pro forma adjustment) for the Company.

A. Yes. As can been seen in Table II for the Navajo water system, which will be discussed in more detail below, the slope is negative or downward sloping, until 18 years of data is used. In other words, if the Company had used less than 18 years in its regression model, its pro-forma adjustment would be a negative amount. Had Mr. Reiker used the same 11 years of data as he did in the Eastern and Western Group rate cases, the Company's pro-forma adjustment would be a negative amount, and it would have had a downward impact on the revenue requirement.

Q. Can you explain Mr. Reiker's methodology in more detail?

A. Yes. The relevant data for the Northern group is presented in Appendix A (Table 1 and Table 2). The following example is presented using the Navajo water system. Using the regression equation Y = m(x) + b, the projected 2015 expense amount as presented in Table 1 for the Navajo water system is calculated as follows: $22.15 (rounded) = $0.22043 (23years) + $17.077. In this case, the slope "m" is $0.22043 and the Y-intercept "b" is $17.077. The slope indicates that each year expenses should increase by approximately $0.22043, assuming that the "m" is statistically significant.

Using this method of calculation, Mr. Reiker then averaged the projected 2013 and 2015 future test year costs and converted the cost per customer back into expense using the number of customers and then subtracted the amount from the recorded 2010 test year amount to derive the amount for his T&D pro forma adjustment.

Q. Are the Company-proposed T&D pro-forma adjustments based on results that are statistically significant and statistically robust?

A. No. Staff's analysis using data over different time periods showed that no statistically robust estimate could be identified. The Company used 20 years of data in its regression analyses. Staff performed analyses using shorter periods, specifically 3 through 20 years. The results differ radically among the different formulations of the model(s) (See Table II in Appendix A).

Q. Discuss the meaning of R and R squared, as presented in Table II?

A. The coefficients of correlation ("R") are measures of the strength and direction of linear relationships, and they range between negative 1 (perfect inverse linear relationship) and positive 1 (perfect direct linear relationship). The coefficients of determination ("R squared") are the squares of the coefficients of correlation (R) for these simple regression models. For a simple regression model the R squared can be viewed as the portion of the variation in Y, the dependent variable, attributed to the variation in X, the independent variable.

The R squared for Mr. Reiker's 20-year regression model is 13.60 percent for Navajo and 88.10 for Verde Valley. Only Verde Valley has an R squared exceeding 75 percent, a level indicating that over three-quarters of the variation in customer expenses is explained by the change in time. The R squared for the 20-year Navajo Valley model indicates that

13.60 percent of the total variation in T&D expenses is explained by years, while the other 86.40 percent is explained by something else. The R squared for the 20-year Verde Valley model indicates that 88.10 percent of the total variation in T&D expenses is explained by years, while the other 11.90 percent is explained by something else. Table II also presents P-Value, a measure of statistical significance for an independent variable. This is discussed below.

Q. What is meant by statistical significance?

A. As described above, regression analysis has been used to estimate the slope of a line, which in this case represents the change in expenses per year. In every model considered, the data never perfectly fits the regression line. This is expected when dealing with real world data. The consequences of this less than perfect fit are that the regression results must be viewed as estimates.

The P-Values shown in Table II, indicate whether the results are significantly different from zero. In simple terms, a slope-coefficient of zero means that this variable has no impact. The regression output shows a 95 percent confidence interval that can be used to quantify a low case estimate (lower bound) and high case estimate (upper bound) for the true slope that relates expenses to time. When the P-Value is greater than 5 percent, zero is inside the confidence interval and the slope estimate is considered statistically insignificant because it has no practical use, meaning that the variable has no consequence. Additionally, the lower bound of the estimate will be negative and the upper bound will be positive, which creates a confusing and useless message that the slope may be negative, or may be positive, or somewhere in between, perhaps even zero. The conclusion is that no known and measureable adjustment could be based on such an ambiguous result.

The P-Values for Mr. Reiker's 20-year regression model are 10.96 percent for Navajo, and 0.0 percent for Verde Valley. Only the 20 year regression for the Verde Valley is statistically significant.

Q. What conclusion can be drawn from the selected statistical data in Table II?

A. Depending on what regression model utilized, the resulting Slope, R-squared, and P-Value can vary significantly. From among the varied alternatives, Mr. Reiker was able to pick the 20-year model, which does not match the 11-year time horizon he favored in the Eastern and Western Group cases but provides a beneficial result for the Company. The analysis for the Navajo water system is not statistically significant.

Staff opposes the Company's regression-based adjustments because they are not known and measurable, have the appearance of being cherry-picked from a set of statistical alternatives, and are inconsistent with traditional rate-making principles.

Q. Is normalizing expenses over a five-year period preferable to estimating expenses using projections for future years based on a faulty regression analysis?

A. Yes, Staff concludes that it is.

Q. Does Staff have concerns about the Company's claim that it incurred the minimum pumping and T&D expenses to keep the systems functional?

A. Yes. Inadequate maintenance can have undesirable consequences, including: decreasing the useful life of plant equipment, causing increases in other short-term or long-term expenses, decreasing system function efficiency and increasing water loss. Also, although the Company saw reason to decrease its maintenance expense, a cost which was already authorized and included in rates in the prior rate case, the Company did not see a comparable need to reduce dividend payments to shareholders. The Company's approach to reducing cash flow requirements does not appear to provide equal consideration for ratepayers and shareholders.

Q. What is a normalization of expenses?

A. Normalization is the procedure of recognizing an average on-going level of operating expense when the test year amount is abnormal. Staff usually performs a three to five-year historical analysis of operating expenses to identify accounts that are potential expense normalization candidates. When Staff concludes that a normalization adjustment is appropriate, often a three-year or five-year average is used for the normalized expense. Normalization should be restricted to circumstances where the test year is abnormal.

Q. Did Staff's analysis conclude that the Company's test year pumping and T&D expenses are unusually low?

A. No. Although there is a downward trend in these expenses in recent years, a trend would not necessarily indicate that the test year is abnormally low. For example, a downward trend could represent improved operating efficiencies.

Q. What is Staff's recommendation?

A. Staff recommends reversing the Company's proposed pro-forma adjustments and replacing them with pro forma adjustments to reflect normalized amounts based on five historical years. The net effect of Staff recommendations decreases pumping and T&D expense by $21,629 for the Navajo water system, and by $53,298 for the Verde Valley water system, as shown in Staff schedules JMM-9 and JMM-12 for each system.

Operating Income Adjustment No. 4 – Administrative and General Expenses (Navajo and Verde Valley water systems)

Q. Did Staff make an adjustment to Administrative and General Expenses to remove expenses not necessary to the provision of water services?

A. Yes.

Q. What adjustment did Staff make?

A. Staff removed administrative and general expenses related to memberships, charitable contributions, sponsorships, luncheons and gifts and awards.

Q. What is Staff's recommendation?

A. Staff recommends decreasing administration and general expenses by $2,311 for Navajo and $1,217 for Verde Valley, as shown on Schedules JMM-13.

Operating Income Adjustment No. 5 – BMP expenses (Navajo and Verde Valley water systems)

Q. What pro forma is the Company proposing for BMP expenses?

A. The Company proposes pro forma adjustments to increase administrative and general expense for the incremental costs it projects to incur for the additional BMPs required by Decision No. 71845.

Q. What did the Commission authorize in Decision No. 71845?

A. The Commission authorized the Company to request cost recovery of ***actual costs*** associated with implemented BMPs in its next rate case. Since the Company's pro forma adjustment reflects projected costs instead of actual costs, the requested amounts are inconsistent with the authorization.

Q. What is Staff's recommendation regarding the Company's pro-forma for BMP expenses?

A. Staff recommends reversing the pro-forma adjustment which would decrease BMP expenses for the Navajo water system by $18,750, and $23,575 for the Verde Valley water system, as shown in Staff schedules JMM-9 and JMM-14. In addition, Staff recommends that the Company be allowed to defer BMP costs for consideration of recovery in a future rate case, provided these costs are reasonable, prudent and can be substantiated.

Operating Income Adjustment No. 6 – Rate Case Expense (Navajo and Verde Valley water systems)

Q. Does Staff support the Company's request to recover $441,576 for rate case expense?

A. No. Staff recommends authorizing total rate case expense of $350,000 for the Northern Group. In consideration of the Commission's decision in the February 2013 Open Meeting to authorize $350,000 for total rate case expense spread over three years for the Company's Eastern Group rate case, Staff has spread $350,000 over three years which results in $116,667 of annual rate case expense ($53,946 for Navajo and $62,721 for Verde Valley).

Q. What is Staff recommending?

A. Staff recommends decreasing rate case expense by $9,290 for the Navajo water system, and by $21,235 for the Verde Valley water system, as shown in Staff schedules JMM-9 and JMM-15 for each system.

Operating Income Adjustment No. 7 – Depreciation Expense (Navajo and Verde Valley water systems)

Q. Why is there a difference between the Company's depreciation expense and Staff's depreciation expense for both the Navajo water system and the Verde Valley water system?

A. The difference as mentioned earlier is the result of Staff truing-up Post-Test Year plant.

Q. What is Staff's recommendation?

A. Staff recommends increasing the Company's proposed depreciation expense for the Navajo water system by $10,076 , and decreasing the Company's proposed depreciation expense for the Verde Valley water system by $1,689, as shown in Staff Schedules JMM-8 and JMM-16.

Operating Income Adjustment No. 8 – Income Tax Expense (Navajo and Verde Valley water systems)

Q. What is the Company proposing for test year income tax expense?

A. The Company's test year income tax expense reflects application of the statutory State and Federal income tax rates to its adjusted test year income.

Q. How did Staff calculate Test Year Income Tax Expense?

A. Staff calculated test year income tax expense by applying the statutory State and Federal income tax rates to Staff's adjusted test year taxable income.

Q. Since Staff and the Company used the same tax rates and methods to calculate test year income tax expense, what accounts for the difference between the Staff and the Company test year income tax expenses?

A. Staff and the Company used different test year operating results and synchronized interest to calculate taxable income.

Q. What adjustment does Staff recommend for test year income tax expense?

A. Staff recommends increases in tax year income tax expenses of $28,119 for the Navajo water system and $60,189 for the Verde Valley water system. Please see Schedules JMM-17 for the respective systems.

Operating Income Adjustment No. 9 – Property Tax Expense (Navajo and Verde Valley water systems)

Q. What method has the Commission typically adopted to determine property tax expense for ratemaking purposes of Class A water utilities?

A. The Commission's practice in recent years has been to use a modified ADOR methodology for water utilities.

Q. Did Staff calculate property tax expense using the modified ADOR methodology for each of the water systems?

A. Yes. Staff's calculations are presented in Schedule JMM-18 for the respective water systems.

Q. Based on the Staff's calculations, what adjustment does Staff recommend for test year property tax expense?

A. Staff recommends decreases in test year property tax expense of $29,212 for the Navajo water system and $2,059 for the Verde Valley water system. Please see Schedules JMM-18 for the respective systems.

IX. DISTRIBUTION SYSTEM IMPROVEMENT CHARGE

Q. Has the Company proposed a DSIC in this rate proceeding?

A. Yes, just as the Company did in its Western and Eastern Group filings.[7]

Q. Explain the general concept of a DSIC as proposed by the Company?

A. A DSIC is a surcharge mechanism that enables the Company to implement and/or change a surcharge to recover the revenue requirement (depreciation and rate of return) of capital invested in certain items of plant between rate cases.

Q. Has the Commission previously addressed a request for a similar mechanism by another water company in Arizona?

A. Yes, a similar mechanism was requested by Arizona-American Water Company in Docket Nos. W-01303A-09-0343 et al., using the name Infrastructure Improvement Surcharge ("IIS").

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[7] See Docket Nos. W-01445A-11-0310 and W-01445A-10-0517.

Q. Did the Commission approve the requested ISS?

A. No. In Decision No. 72047, the Commission stated:

> We agree with RUCO and Staff that the recovery of expenditures for plant additions and improvements does not warrant the extraordinary ratemaking device of an adjustor mechanism, and will therefore not grant the request for institution of an IIS.

Q. What was the outcome for the Company's Western and Eastern groups?

A. The Company's Western group rate case filing resulted in a settlement agreement that did not adopt a DSIC. The Commission's decision in the February 2013 Open Meeting for the Eastern Group keeps that Docket open to allow discussions, to begin after February 28, 2013, regarding AWC's DSIC proposal and other DSIC-like proposals Staff chooses to introduce. The Commission's decision also directs Staff to provide the Commission with an update on the progress of negotiations by the Commission's Open Meeting of April 9 and 10, 2013, and directs the Hearing Division to issue a proposed Order on the DSIC for consideration by the Commission no later than its Open Meeting on June 11 and 12, 2013.

Q. What is Staff's recommendation?

Staff recommends that the Commission adopt, in this case, whatever the outcome is in AWC's Docket No. W-01445A-11-0310 for its DSIC.

X. ARSENIC COST RECOVERY MECHANISM

Q. Has the Company asked to continue using an arsenic cost recovery mechanism ("ACRM") mechanism going forward?

A. Yes.

Q. What is Staff's recommendation?

A. Staff recommends that the Commission authorize an arsenic cost recovery mechanism ("ACRM") for the Company that parallels the ACRM process previously adopted for the Company. That ACRM process requires the Company to obtain authorization of an ACRM in the context of a general rate case, and to subsequently apply for approval of up to two ACRM surcharges. Each surcharge request/application is subject to review and separate Commission authorization. The Company is required to obtain further ACRM authorization in a subsequent general rate case prior to requesting any additional ACRM surcharges.

Staff recommends application of ACRM surcharges on a fully consolidated basis. That is, an ACRM surcharge should only apply to customers in the Company's system or sub-system where the treatment plant is physically connected unless the Commission has authorized fully consolidated rates (i.e., the same monthly minimum charges and commodity rates) for customers.

XI. OFF-SITE FACILITIES FEE

Q. Has the Company proposed an off-site facilities fee in this case?

A. Yes. The Company proposes an off-site facilities fee to help offset the costs of constructing additional plant to provide for water production, treatment, delivery, storage, and pressure facilities. This fee would only be applicable to new service connections in the service area. The proposed fee is $1,100 for a 5/8 x 3/4-inch metered customer, and it increases by the American Water Works Association capacity multipliers for larger meter sizes.

Q. What is Staff's recommendation?

A. Staff concludes that a proposed off-site facilities fee is reasonable, but recommends the adoption of Staff's specific tariff language, and charges contained in Attachment A of the Staff engineering witness' testimony.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Arizona Water Company - Navajo
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Test Year ended December 31, 2011

DIRECT TESTIMONY OF Jeffrey M. Michlik

TABLE OF CONTENTS TO SCHEDULES

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Schedule JMM-1

REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	(A) COMPANY FAIR VALUE	(B) STAFF FAIR VALUE
1	Adjusted Rate Base	$ 9,911,050	$ 10,065,911
2	Adjusted Operating Income (Loss)	$ 430,276	$ 471,338
3	Current Rate of Return (L2 / L1)	4.34%	4.68%
4	Required Rate of Return	9.11%	7.9%
5	Required Operating Income (L4 * L1)	$ 902,842	$ 795,207
6	Operating Income Deficiency (L5 - L2)	$ 472,566	$ 323,869
7	Gross Revenue Conversion Factor	1.6469	1.6510
8	Required Revenue Increase (L7 * L6)	$ 778,281	**$ 534,713**
9	Adjusted Test Year Revenue	$ 3,595,079	$ 3,663,830
10	Proposed Annual Revenue (L8 + L9)	$ 4,373,360	$ 4,198,543
11	Required Increase in Revenue (%)	21.65%	14.59%

References:
Column (A): Company Schedule A-1
Column (B): Staff Schedules JMM-3 and JMM-7

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Schedule JMM-2

GROSS REVENUE CONVERSION FACTOR

LINE NO.	DESCRIPTION	(A)	(B)	(C)	(D)
	Calculation of Gross Revenue Conversion Factor:				
1	Revenue	100.0000%			
2	Uncollecible Factor (Line 11)	0.0000%			
3	Revenues (L1 - L2)	100.0000%			
4	Combined Federal and State Income Tax and Property Tax Rate (Line 23)	39.4311%			
5	Subtotal (L3 - L4)	60.5689%			
6	**Revenue Conversion Factor (L1 / L5)**	1.651014			
	Calculation of Uncollecttible Factor:				
7	Unity	100.0000%			
8	Combined Federal and State Tax Rate (Line 23)	38.5989%			
9	One Minus Combined Income Tax Rate (L7 - L8)	61.4011%			
10	Uncollectible Rate	0.0000%			
11	Uncollectible Factor (L9 * L10)	0.0000%			
	Calculation of Effective Tax Rate:				
12	Operating Income Before Taxes (Arizona Taxable Income)	100.0000%			
13	Arizona State Income Tax Rate	6.9680%			
14	Federal Taxable Income (L12 - L13)	93.0320%			
15	Applicable Federal Income Tax Rate (Line 55)	34.0000%			
16	Effective Federal Income Tax Rate (L14 x L15)	31.6309%			
17	Combined Federal and State Income Tax Rate (L13 +L16)		38.5989%		
	Calculation of Effective Property Tax Factor				
18	Unity	100.0000%			
19	Combined Federal and State Income Tax Rate (L17)	38.5989%			
20	One Minus Combined Income Tax Rate (L18-L19)	61.4011%			
21	Property Tax Factor (JMM-17, L27)	1.3555%			
22	Effective Property Tax Factor (L20*L21)		0.8323%		
23	Combined Federal and State Income Tax and Property Tax Rate (L17+L22)			39.4311%	
24	Required Operating Income (Schedule JMM-1, Line 5)	$ 795,207			
25	AdjustedTest Year Operating Income (Loss)	471,338			
26	Required Increase in Operating Income (L24 - L25)		$ 323,869		
27	Income Taxes on Recommended Revenue (Col. [E], L52)	$ 291,078			
28	Income Taxes on Test Year Revenue (Col. [B], L52)	87,482			
29	Required Increase in Revenue to Provide for Income Taxes (L27 - L28)		203,596		
30	Recommended Revenue Requirement (Schedule JMM-1, Line 10)	$ 4,198,543			
31	Uncollectible Rate (Line 10)	0.0000%			
32	Uncolllectible Expense on Recommended Revenue (L30*L31)	$ -			
33	Adjusted Test Year Uncollectible Expense	$ -			
34	Required Increase in Revenue to Provide for Uncollectible Exp. (L32-L33)		-		
35	Property Tax with Recommended Revenue (JMM-17, Col B, L31)	$ 156,233			
36	Property Tax on Test Year Revenue (JMM-17, Col A, L17)	148,985			
37	Increase in Property Tax Due to Increase in Revenue (L35-L36)		7,248		
38	Total Required Increase in Revenue (L26 + L29 + L34 + L37)		$ 534,713		

LINE NO.	DESCRIPTION	Test Year		Staff Recommended
	Calculation of Income Tax:			
39	Revenue (Schedule JMM-7, Col. [C], Line 5 & Sch. JMM-1, Col. [D] Line 10)	$ 3,663,830	$ 534,713	$ 4,198,543
40	Operating Expenses Excluding Income Taxes	$ 3,105,010		$ 3,112,258
41	Synchronized Interest (L56)	$ 332,175		$ 332,175
42	Arizona Taxable Income (L39 - L40 - L41)	$ 226,645		$ 754,110
43	Arizona State Income Tax Rate	6.9680%		6.9680%
44	Arizona Income Tax (L42 x L43)	$ 15,793		$ 52,546
45	Federal Taxable Income (L42 - L44)	$ 210,852		$ 701,563
46	Federal Tax on First Income Bracket ($1 - $50,000) @ 34%	$ 17,000		$ 17,000
47	Federal Tax on Second Income Bracket ($51,001 - $75,000) @ 34%	$ 8,500		$ 8,500
48	Federal Tax on Third Income Bracket ($75,001 - $100,000) @ 34%	$ 8,500		$ 8,500
49	Federal Tax on Fourth Income Bracket ($100,001 - $335,000) @ 34%	$ 37,690		$ 79,900
50	Federal Tax on Fifth Income Bracket ($335,001 -$10,000,000) @ 34%	$ -		$ 124,632
51	Total Federal Income Tax	$ 71,690		$ 238,532
52	Combined Federal and State Income Tax (L44 + L51)	$ 87,482		$ 291,078
53	Applicable Federal Income Tax Rate [Col. [E], L51 - Col. [B], L51] / [Col. [E], L45 - Col. [B], L45]			34.0000%
	Calculation of Interest Synchronization:			
54	Rate Base (Schedule JMM-3, Col. (C), Line 17	$ 10,065,911		
55	Weighted Average Cost of Debt	3.3000%		
56	Synchronized Interest (L45 X L46)	$ 332,175		

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Schedule JMM-3

RATE BASE - ORIGINAL COST

LINE NO.		(A) COMPANY AS FILED	(B) STAFF ADJUSTMENTS	Adj. No.	(C) STAFF AS ADJUSTED
1	Plant in Service	$ 30,223,380	$ 228,158	1, 2	$ 30,451,537
2	Less: Accumulated Depreciation	9,719,013	5,004	1, 2	9,724,017
3	Net Plant in Service	$ 20,504,367	$ 223,153		$ 20,727,520
4					
5	*LESS:*				
6					
7	Contributions in Aid of Construction (CIAC)	$ 6,338,423	$ -		$ 6,338,423
8	Less: Accumulated Amortization	1,479,824	-		$ 1,479,824
9	Net CIAC	4,858,599	-		$ 4,858,599
10					
11	Advances in Aid of Construction (AIAC)	3,416,251	-		3,416,251
12					
13	Customer Deposits	21,020	-		21,020
14					
15	Deferred Income Tax Credits	2,752,278	-		2,752,278
16					
17					
18	*ADD:*				
19					
20					
21	Working Capital	454,831	(68,292)	3	386,539
22					
23	Deferred Regulatory Assets	-	-		-
24					
25					
26	**Original Cost Rate Base**	$ 9,911,050	$ 154,861		$ 10,065,911

References:
Column [A]: Company as Filed
Column [B]: Schedule JMM-4
Column (C): Column (A) + Column (B)

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Schedule JMM-4

SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

LINE NO.	ACCT. NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJ #1 Plant True-Up Ref: Sch JMM-5	[C] ADJ #2 Land Not Used & Useful Ref: Sch JMM-6	[D] ADJ #3 Cash Working Capital Ref: Sch JMM-7	[E] STAFF ADJUSTED
		PLANT IN SERVICE:					
1							
2	301	Organization Cost	$ 61	$ -	$ -	$ -	$ 61
3	302	Franchise Cost	-	-	-	-	$ -
4	303	Other Intangibles	2,747	-	-	-	$ 2,747
5	310.1	Water Rights	500,747	-	-	-	$ 500,747
6	310.3	Other Source of Supply Land	30,155	25,334	(25,334)	-	$ 30,155
7	310.4	Wells - Other	-	-	-	-	$ -
8	314	Wells	1,808,846	91,574	-	-	$ 1,900,420
9	320	Pumping Plant Land	8,553	-	-	-	$ 8,553
10	321	Pumping Plant Structures & Improvements	149,931	-	-	-	$ 149,931
11	325	Electric Pumping Equipment	2,772,041	67,225	-	-	$ 2,839,266
12	328	Gas Engine Equipment	-	-	-	-	$ -
13	330	Water Treatment Plant - Land	50,000	(50,000)	-	-	$ -
14	331	Water Treatment Structures and Improvements	563	10,321	-	-	$ 10,884
15	332	Water Treatment Equipment	147,993	3,954	(3,954)	-	$ 147,993
16	340	Transmission and Distribution - Land	53,126	-	-	-	$ 53,126
17	342	Storage Tanks	1,338,226	-	-	-	$ 1,338,226
18	343	Transmission and Distribution Mains	14,198,444	(5,271)	-	-	$ 14,193,173
19	344	Fire Sprinkler Taps	204,862	-	-	-	$ 204,862
20	345	Services	4,978,567	129,897	-	-	$ 5,108,464
21	346	Meters	624,011	(50,000)	-	-	$ 574,011
22	348	Hydrants	1,407,748	-	-	-	$ 1,407,748
23	389	General Plant Land	1,995			-	$ 1,995
24	390	General Plant Structures	333,781	-	-	-	$ 333,781
25	390.1	Leasehold Improvements	219,739	(530)	-	-	$ 219,209
26	391	Office Furniture & Equipment	706,769	-	-	-	$ 706,769
27	393	Warehouse Equipment	4,590	-	-	-	$ 4,590
28	394	Tools, Shops, and Garage Equipment	139,887	409	-	-	$ 140,296
29	395	Laboratory Equipment	3,113	-	-	-	$ 3,113
30	396	Power Operated Equipment	10,599	-	-	-	$ 10,599
31	397	Communications Equipment	488,589	34,533			$ 523,122
32	398	Miscellaneous Equipment	37,695				$ 37,695
33		Intentionally Left Blank		-	-	-	$ -
34		Total Plant in Service	$ 30,223,380	$ 257,446	$ (29,288)	$ -	$ 30,451,537
35							
36		Less: Accumulated Depreciation	9,719,013	5,117	(113)	-	9,724,017
37			-	-	-	-	-
38		Net Plant in Service	$ 20,504,367	$ 252,328	$ (29,175)	$ -	$ 20,727,520
39							
40		*LESS:*					
41		Contributions in Aid of Construction (CIAC)	$ 6,338,423	$ -	$ -	$ -	$ 6,338,423
42		Less: Accumulated Amortization	1,479,824	-	-	-	1,479,824
43		Net CIAC (L25 - L26)	4,858,599	-	-	-	4,858,599
44		Advances in Aid of Construction (AIAC)	3,416,251	-	-	-	3,416,251
45		Customer Deposits	21,020	-	-	-	21,020
46		Deferred Income Taxes	2,752,278	-	-	-	2,752,278
47							
48							
49		*ADD:*					
50		Working Capital	454,831	-	-	(68,292)	386,539
51		Deffered Regulatory Assets	-	-	-	-	-
52							
53		**Original Cost Rate Base**	$ 9,911,050	$ 252,328	$ (29,175)	$ (68,292)	$ 10,065,911

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RATE BASE ADJUSTMENT NO. 1 - STAFF POST-TEST YEAR TRUE-UP

LINE NO.	ACCT NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	310.3	Other Source of Supply Land	$ 30,155	$ 25,334	$ 55,489
2	314	Wells	1,808,846	91,574	1,900,420
3	325	Electric Pumping Equipment	2,772,041	67,225	2,839,266
4	330	Water Treatment Plant Land	50,000	(50,000)	-
5	331	Water Treatment Structures & Improvements	563	10,321	10,884
6	332	Water Treatment Equipment	147,993	3,954	151,947
7	343	Transmission & Distribution Mains	14,198,444	(5,271)	14,193,173
8	345	Services	4,978,567	129,897	5,108,464
9	346	Hydrants	1,407,748	(50,000)	1,357,748
10	397	Communications Equipment	488,589	34,533	523,122
11			$ 25,882,946	$ 257,567	$ 26,140,513
12					
13		Accumulated Depreciation	$ 9,719,013	$ 5,108	$ 9,724,121
14					
15		Phoenix Meter Shop			
16	391	Office Furniture and Equipment	$ 706,769	$ (530)	$ 706,239
17	394	Tools, Shop & Garage Equipment	139,887	409	140,296
18			$ 846,656	$ (121)	$ 846,535
19					
20		Accumulated Depreciation	$ 9,724,121	$ 9	$ 9,724,130
21					

REFERENCES:
Column [A]: Company Filing
Column [B]: Testimony JMM
Column [C]: Column [A] + Column [B]

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Schedule JMM-6

RATE BASE ADJUSTMENT NO. 2 - LAND NOT USED AND USEFUL

LINE NO.	ACCT NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	310.3	Other Source of Supply Land	$ 55,489	$ (25,334)	$ 30,155
2	332	Water Treatment Equipment	151,947	(3,954)	147,993
3			$ 207,436	$ (29,288)	$ 178,148
4					
5		Accumulated Depreciation	$ 9,724,130	$ (113)	$ 9,724,017

[1] Amount includes Post-Test Year True-up.

REFERENCES:
Column [A]: Company Filing
Column [B]: Testimony JMM
Column [C]: Column [A] + Column [B]

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Schedule JMM-7

RATE BASE ADJUSTMENT NO. 3 - CASH WORKING CAPITAL

LINE NO.	ACCT NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1		Working Capital	$ 454,831	$ (68,292)	$ 386,539

LINE NO.	DESCRIPTION	Test Year Adjusted Results	Revenue	Expense	[D] Net Lag Days [B - C]	[E] Lead / Lag Factor [D ÷ 365]	[F] Working Cash Requirement [A X E]
2							
3							
4							
8	Staff's Calculation						
9	Purchased Power	$ 262,792	29.23	30.87	(1.64)	(0.0045)	$ (1,184)
10	Payroll	930,148	29.23	14.00	15.23	0.0417	38,801
11	Purchased Water	610	29.23	30.47	(1.24)	(0.0034)	(2)
12	Chemicals	17,436	29.23	(18.11)	47.34	0.1297	2,261
13	Property & Liability Insurance	49,336	29.23	(45.27)	74.50	0.2041	10,069
14	Workman's Compensation Insurance	9,176	29.23	(46.50)	75.73	0.2075	1,904
15	Health Insurance	177,978	29.23	(8.92)	38.15	0.1045	18,600
16	Other O&M (Excluding Rate Case Expense)	591,653	29.23	(9.27)	38.50	0.1055	62,401
17	Federal Income Taxes	238,532	29.23	37.00	(7.77)	(0.0213)	(5,080)
18	State Income Taxes	52,546	29.23	37.00	(7.77)	(0.0213)	(1,119)
19	FICA Taxes	69,483	29.23	14.00	15.23	0.0417	2,898
20	FUTA & SUTA Taxes	2,230	29.23	83.10	(53.87)	(0.1476)	(329)
21	Property Taxes	156,233	29.23	212.00	(182.77)	(0.5008)	(78,234)
22	Registration, Svc. Contracts, & Misc. Fees	64,052	29.23	(98.83)	128.06	0.3508	22,472
23	Retirement Annuities (401k)	84,555	29.23	34.72	(5.49)	(0.0151)	(1,273)
24							
25							
26		$ 2,706,760					$ 72,186
27	Subtotal						
28							
29	Interest Expense	331,096	29.23	91.25	(62.02)	(0.1699)	(56,263)
30		-	-	-	-	-	-
31							
32	Subtotal	$ 331,096					$ (56,263)
33							
34							
35	Total	3,037,855					$ 15,924
36							
37	Company Cash Working Capital						$ 84,216
38							
39	Increase/(Decrease)						$ (68,292)

REFERENCES:
Column [A]: Company Filing
Column [B]: Direct Testimony JMM
Column [C]: Column [A] + Column [B]

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Schedule JMM-8

OPERATING INCOME STATEMENT - ADJUSTED TEST YEAR AND STAFF RECOMMENDED

LINE NO.	DESCRIPTION	[A] COMPANY ADJUSTED TEST YEAR AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF PROPOSED CHANGES	[E] STAFF RECOMMENDED
1	*OPERATING REVENUES:*					
2	Residential	$ 3,065,720	$ 68,751	$ 3,134,471	$ 534,713	$ 3,669,184
3	Commercial	459,139	-	459,139	-	459,139
4	Industrial	532	-	532	-	532
5	Private Fire Service	14,767		14,767		14,767
6	Other Water Revenues	12,480	-	12,480	-	12,480
7	Total Water Revenues	$ 3,552,638	$ 68,751	$ 3,621,389	$ 534,713	$ 4,156,102
8						
9	Miscellaneous	42,441.00		42,441.00		42,441
10	Total Operating Revenues	$ 3,595,079	$ -	$ 3,663,830	$ 534,713	$ 4,198,543
11						
12	*OPERATING EXPENSES:*					
13	Source of Supply Expenses					
14	Purchased Water	$ 610	$ -	$ 610	$ -	$ 610
15	Other	38,862	1,281	40,143	-	40,143
16	Pumping Expenses					
17	Purchased Power	262,792	-	262,792	-	262,792
18	Purchased Gas	451	-	451	-	451
19	Other	94,464	11,418	105,882	-	105,882
20	Water Treatment Expenses	73,577	2,550	76,127	-	76,127
21	Transmission and Distribution Expenses	530,435	(21,629)	508,806	-	508,806
22	Customer Accounting Expenses	520,456	-	520,456	-	520,456
23	Sales Expense	881	-	881	-	881
24	Administrative and General Expenses	724,239	(30,351)	693,888	-	693,888
25	Total Operation and Maintenance Expense	2,246,767	(36,732)	2,210,035	-	2,210,035
26						
27	Depreciation and Amortization Expenses	672,841	10,076	682,917		682,917
28						
29	Taxes					
30	Federal Income Taxes	51,093	20,597	71,690	166,842	238,532
31	State Income Taxes	11,255	4,538	15,793	36,754	52,546
32	Property Taxes	119,773	29,212	148,985	7,248	156,233
33	Other	63,073	-	63,073	-	63,073
34	Total Taxes	245,194	54,346	299,540	210,843	510,384
35		-	-	-	-	-
36		-	-	-	-	-
37	Total Operating Expenses	3,164,802	-	3,192,492	210,843	3,403,336
38						
39	Operating Income (Loss)	$ 430,276	$ 41,062	$ 471,338	$ 323,869	$ 795,207

References:
Column (A): Company Schedule C-1
Column (B): Schedule JMM-9
Column (C): Column (A) + Column (B)
Column (D): Schedules JMM-17 and JMM-18
Column (E): Column (C) + Column (D)

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Schedule JMM-9

SUMMARY OF OPERATING INCOME STATEMENT ADJUSTMENTS - TEST YEAR

LINE NO.	ACCT. NO. DESCRIPTION	[A] COMPANY AS FILED	[B] Reverse Weather Normalization ADJ #1 Ref: Sch JMM-10	[C] Fleet Fuel Expense ADJ #2 Ref: Sch JMM-11	[D] Removal of Pumping Transmission and Distribution Projection ADJ #3 Ref: Sch JMM-12	[E] Administrative and General Expense Adjustment ADJ #4 Ref: Sch JMM-13	[F] Remove Additional BMP Expenses ADJ #5 Ref: Sch JMM-14	[G] Rate Case Expense ADJ #6 Ref: Sch JMM-15	[H] Depreciation Expense ADJ #7 Ref: Sch JMM-16	[I] Income Tax Expense ADJ #8 Ref: Sch JMM-17	[J] Property Expense ADJ #9 Ref: Sch JMM-18	[K] STAFF ADJUSTED
1	*OPERATING REVENUES:*											
2	Residential	$ 3,065,720	$ 68,751	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,134,471
3	Commercial	459,139	-	-	-	-	-	-	-	-	-	459,139
4	Industrial	532	-	-	-	-	-	-	-	-	-	532
5	Private Fire Service	14,767	-	-	-	-	-	-				14,767
6	Other Water Revenues	12,480	-	-	-	-	-	-	-	-	-	12,480
7	Total Water Revenues	$ 3,552,638	$ 68,751	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,621,389
8												
9	Miscellaneous	$ 42,441										$ 42,441
10	Total Operating Revenues	$ 3,595,079	$ 68,751	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,663,830
11												
12	*OPERATING EXPENSES:*											
13	Source of Supply Expenses											
14	Purchased Water	$ 610	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 610
15	Other	38,862	1,281	-	-	-	-	-	-	-	-	40,143
16	Pumping Expenses								-	-	-	
17	Purchased Power	262,792	-	-	-	-	-	-	-	-	-	262,792
18	Purchased Gas	451	-	-	-	-	-	-	-	-	-	451
19	Other	94,464	11,418	-	-	-	-	-	-	-	-	105,882
20	Water Treatment Expenses	73,577	2,550	-	-	-	-	-	-	-	-	76,127
21	Transmission and Distribution Expenses	530,435	-	-	(21,629)	-	-	-	-	-	-	508,806
22	Customer Accounting Expenses	520,456	-	-	-	-	-	-	-	-	-	520,456
23	Sales Expense	881	-	-	-	-	-	-	-	-	-	881
24	Administrative and General Expenses	724,239	-	-	-	(2,311)	(18,750)	(9,290)	-	-	-	693,888
25	Total Operation and Maintenance Expense	$ 2,246,767	$ 15,249	$ -	$ (21,629)	$ (2,311)	$ (18,750)	$ (9,290)	$ -	$ -	$ -	$ 2,210,035
26									-	-	-	
27	Depreciation and Amortization Expenses	672,841	-	-	-	-	-	-	10,076	-	-	682,917
28									-	-	-	
29	Taxes								-	-	-	
30	Federal Income Taxes	51,093	-	-	-	-	-	-	-	20,597	-	71,690
31	State Income Taxes	11,255	-	-	-	-	-	-	-	4,538	-	15,793
32	Property Taxes	119,773	-	-	-	-	-	-	-	-	29,212	148,985
33	Other	63,073	-	-	-	-	-	-	-	-	-	63,073
34	Total Taxes	$ 245,194	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 25,134	$ 29,212	$ 299,540
35		-	-	-	-	-	-	-	-	-	-	-
36	Total Operating Expenses	$ 3,164,802	$ 15,249	$ -	$ (21,629)	$ (2,311)	$ (18,750)	$ (9,290)	$ 10,076	$ 25,134	$ 29,212	$ 3,192,492
37									$ -	$ -	$ -	
38	Operating Income (Loss)	$ 430,276	$ 53,502	$ -	$ 21,629	$ 2,311	$ 18,750	$ 9,290	$ (10,076)	$ (25,134)	$ (29,212)	$ 471,338

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Schedule JMM-10

OPERATING INCOME ADJUSTMENT NO. 1 - REVERSE WEATHER NORMALIZATION

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF[1] RECOMMENDED
1	Residential	$ 3,065,720	$ 68,751	$ 3,134,471
2	Commercial	459,139	-	459,139
3	Industrial	532	-	532
4	Revenue Adjustments	$ 3,525,391	$ 68,751	$ 3,594,142
5				
6	Source Supply - Other	$ 40,143	$ -	$ 40,143
7	Weather Normalization Expense	(1,281)	1,281	-
8	Total Source Supply - Other	$ 38,862	$ 1,281	$ 40,143
9				
10	Purchased Power	$ 262,792	$ -	$ 262,792
11	Weather Normalization Expense	-	-	-
12	Total Purchased Power	$ 262,792	$ -	$ 262,792
13				
14	Pumping Expense - Other	$ 105,882	$ -	$ 105,882
15	Weather Normalization Expense	(11,418)	11,418	-
16	Total Pumping Expense - Other	$ 94,464	$ 11,418	$ 105,882
17				
18	Water Treatment Expenses	$ 76,127	$ -	$ 76,127
19	Weather Normalization Expense	(2,550)	2,550	-
20	Total Water Treatment Expenses	$ 73,577	$ 2,550	$ 76,127
21				
22	Transmission and Distribution Expenses	$ 530,435	$ -	$ 530,435
23	Weather Normalization Expense	-	-	-
24	Total Transmission and Distribution Expenses	$ 530,435	$ -	$ 530,435
25				
26	Customer Accounting Expenses	$ 520,456	$ -	$ 520,456
27	Weather Normalization Expense	-	-	-
28	Total Customer Accounting Expenses	$ 520,456	$ -	$ 520,456
29				
30	Administrative and General Expenses	$ 724,239	$ -	$ 724,239
31	Weather Normalization Expense	-	-	-
32	Total Administrative and General Expenses	$ 724,239	$ -	$ 724,239
33				
34	Total Expense Adjustments	$ 2,244,825	$ 15,249	$ 2,260,074

[1] Amounts do not reflect other adjustments.

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-11

OPERATING INCOME ADJUSTMENT NO. 2 - FLEET FUEL EXPENSE

		[A]	[B]	[C]
LINE NO.	DESCRIPTION	COMPANY PROPOSED	STAFF ADJUSTMENTS	STAFF[1] RECOMMENDED
1	Source Supply - Other	$ 3,595,053	$ -	$ 3,595,053
2	Fleet Fuel Expenses	26	-	26
3	Total Source Supply - Other	$ 3,595,079	$ -	$ 3,595,079
4				
5	Pumping Expense - Other	$ 94,164	$ -	$ 94,164
6	Fleet Fuel Expenses	300	-	300
7	Total Pumping Expense - Other	$ 94,464	$ -	$ 94,464
8				
9	Water Treatment Expenses	$ 73,496	$ -	$ 73,496
10	Fleet Fuel Expenses	81	-	81
11	Total Water Treatment Expenses	$ 73,577	$ -	$ 73,577
12				
13	Transmission and Distribution Expenses	$ 497,717	$ -	$ 497,717
14	Fleet Fuel Expenses	32,718	-	32,718
15	Total Transmission and Distribution Expenses	$ 530,435	$ -	$ 530,435
16				
17	Customer Accounting Expenses	$ 511,637	$ -	$ 511,637
18	Fleet Fuel Expenses	8,819	-	8,819
19	Total Customer Accounting Expenses	$ 520,456	$ -	$ 520,456
20				
21	Administrative and General Expenses	$ 724,155	$ -	$ 724,155
22	Fleet Fuel Expenses	84	-	84
23	Total Administrative and General Expenses	$ 724,239	$ -	$ 724,239
24				
25	Total Expense Adjustments	$ 5,538,250	$ -	$ 5,538,250
26				
27				
28	Staff's Calculation based on the most recent 12 month gas price			
29				
30		Company Pro-forma	Staff's Recalculation	Adjustment
31	Source Supply - Other	$ 26	$ 26	$ -
32	Pumping Expenses Other	300	300	$ -
33	Water Treatment Expenses	81	81	$ -
34	Transmission and Distribution Expenses	924	924	$ -
35	Customer Accounting Expenses	247	247	$ -
36	Administrative and General Expenses	84	84	-
37	Totals	$ 1,663	$ 1,663	$ -

[1] Amounts do not reflect other adjustments.

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-12

OPERATING INCOME ADJUSTMENT NO. 3 - REMOVAL OF PROJECTED EXPENSES

		[A]	[B]	[C]
LINE NO.	**DESCRIPTION**	**COMPANY PROPOSED**	**STAFF ADJUSTMENTS**	**STAFF[1] RECOMMENDED**
1	Transmission and Distribution Expenses	$ 461,699	$ -	$ 461,699
2	Normalization of Transmission and Distribution Expenses	68,736	(21,629)	47,107
3	Total Transmission and Distribution Expenses	$ 530,435	$ (21,629)	$ 508,806

[1] Amounts do not reflect other adjustments.

Staff Calculation		
2007	$	220,472
2008	$	193,786
2009	$	189,294
2010	$	161,385
2011	$	132,351
Sub-total	$	897,288
5-year average	$	179,457.60
Test year recorded amount	$	132,351
Pro forms Increase/(decrease)	$	47,107

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-13

OPERATING INCOME ADJUSTMENT NO. 4 - ADMINISTRATIVE AND GENERAL EXPENSE ADJUSTMENT

LINE NO.	DESCRIPTION		[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF[1] RECOMMENDED
1	Administrative and General Expenses		$ 724,239	$ (2,311)	$ 721,928

Direct Expenses		Navajo	Verde Valley
Membership Dues at 50% of Total	$ 413	$ 188	$ 225
Charitable Contributions		100	
Sponsorships		800	
Gifts and Awards		176	
Christmas Luncheon		300	
Total Direct Expenses		$ 1,564	$ 225

Allocated Costs		Navajo 0.0943	Verde Valley 0.1252	Allocation Percentage
Membership Dues at 50% of Total	$ 944	$ 89	$ 118	
Gifts and Awards	1040.28	98	130	
Luncheons	1869.29	176	234	
Awards Banquet	4072.63	384	510	
Total Allocated Costs		$ 747	$ 992	
Total Administrative and General Expenses		$ 2,311	$ 1,217	

[1] Amounts do not reflect other adjustments.

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-14

OPERATING INCOME ADJUSTMENT NO. 5 - REMOVAL OF ADDITIONAL BMP COSTS

		[A]	[B]	[C]
LINE NO.	**DESCRIPTION**	**COMPANY PROPOSED**	**STAFF ADJUSTMENTS**	**STAFF[1] RECOMMENDED**
1	Administrative and General Expenses	$ 705,489	$ -	$ 705,489
2	Removal of Additional BMP Costs	18,750	(18,750)	-
3	Total Administrative and General	$ 724,239	$ (18,750)	$ 705,489

[1] Amounts do not reflect other adjustments.

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-15

OPERATING INCOME ADJUSTMENT NO. 6 - RATE CASE EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF[1] RECOMMENDED
1	Administrative and General Expenses	$ 677,983	$ -	$ 677,983
2	Rate Case Expense Pro Forma	46,256	(9,290)	36,966
3	Total Administrative and General	$ 724,239	$ (9,290)	$ 714,949
4				
5				

LINE NO.								
6	Staff's Calculation of Rate Case Expense for Navajo							
7				[A]	[B]	[C]	[D]	[E]
8								
9				T.Y. 2011			T.Y. 2011	
10				Rate Case		Annual	Prior Rate	
11			Average	Expense	Normalization	Amortization /	Case Expense	
12			Number of	Estimate /	Period	Pro Forma	Charged to	Increase /
13	System		Customers	Spread	in Years	Rate Case Exp.	O&M - 928.2	(Decrease)
14								
15								
16	Commission Rate Case Expense	Navajo	9,090	$ 161,837	3	$ 53,946	$ 16,980	$ 36,966
17		Verde Valley	10,569	188,163				
18			19,659	$ 350,000				
19								
20				$ 350,000				
21								
22	Company Proposed Rate Case Expense Pro Forma							$ 46,256
23								
24	Staff Adjustment to Rate Case Expense (L16-L22)							$ (9,290)

[1] Amounts do not reflect other adjustments.

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-16

OPERATING INCOME ADJUSTMENT NO. 7 - NOT USED

LINE NO.	ACCT NO.	DESCRIPTION	[A] PLANT In SERVICE Per Staff	[B] NonDepreciable or Fully Depreciated PLANT	[C] DEPRECIABLE PLANT (Col A - Col B)	[D] DEPRECIATION RATE	[E] DEPRECIATION EXPENSE (Col C x Col D)
1	301	Organization Cost	$ 61	$ 61	$ 0	0.00%	$ -
2	302	Franchise Cost	$ -	$ -	$ -	4.00%	$ -
3	303	Other Intangibles	$ 2,747	$ -	$ 2,747	5.00%	$ 137
4	310.1	Water Rights	$ 500,747	$ -	$ 500,747	0.00%	$ -
5	310.3	Other Source of Supply Land	$ 30,155	$ -	$ 30,155	0.00%	$ -
6	310.4	Wells - Other	$ -	$ -	$ -	2.50%	$ -
7	314	Wells	$ 1,900,420	$ -	$ 1,900,420	3.13%	$ 59,483
8	320	Pumping Plant Land	$ 8,553	$ -	$ 8,553	0.00%	$ -
9	321	Pumping Plant Structures & Improvements	$ 149,931	$ -	$ 149,931	2.86%	$ 4,288
10	325	Electric Pumping Equipment	$ 2,839,266	$ -	$ 2,839,266	5.88%	$ 166,949
11	328	Gas Engine Equipment	$ -	$ -	$ -	4.00%	$ -
12	330	Water Treatment Plant - Land	$ -	$ -	$ -	0.00%	$ -
13	331	Water Treatment Structures and Improvements	$ 10,884	$ -	$ 10,884	2.50%	$ 272
14	332	Water Treatment Equipment	$ 147,993	$ -	$ 147,993	2.86%	$ 4,233
15	340	Transmission and Distribution - Land	$ 53,126	$ -	$ 53,126	0.00%	$ -
16	342	Storage Tanks	$ 1,338,226	$ -	$ 1,338,226	2.00%	$ 26,765
17	343	Transmission and Distribution Mains	$ 14,193,173	$ -	$ 14,193,173	1.79%	$ 254,058
18	344	Fire Sprinkler Taps	$ 204,862	$ -	$ 204,862	2.00%	$ 4,097
19	345	Services	$ 5,108,464	$ -	$ 5,108,464	2.38%	$ 121,581
20	346	Meters	$ 574,011	$ -	$ 574,011	4.55%	$ 26,118
21	348	Hydrants	$ 1,407,748	$ -	$ 1,407,748	1.82%	$ 25,621
22	389	General Plant Land	$ 1,995	$ -	$ 1,995	0.00%	$ -
23	390	General Plant Structures	$ 333,781	$ -	$ 333,781	2.50%	$ 8,345
24	390.1	Leasehold Improvements	$ 219,209	$ -	$ 219,209	8.10%	$ 17,747
25	391	Office Furniture & Equipment	$ 706,769	$ -	$ 706,769	6.67%	$ 47,142
26	393	Warehouse Equipment	$ 4,590	$ -	$ 4,590	5.00%	$ 230
27	394	Tools, Shops, and Garage Equipment	$ 140,296	$ -	$ 140,296	4.00%	$ 5,612
28	395	Laboratory Equipment	$ 3,113	$ -	$ 3,113	5.00%	$ 156
29	396	Power Operated Equipment	$ 10,599	$ -	$ 10,599	6.67%	$ 707
30	397	Communications Equipment	$ 523,122	$ -	$ 523,122	6.67%	$ 34,892
31	398	Miscellaneous Equipment	$ 37,695	$ -	$ 37,695	3.33%	$ 1,255
32		Intentionally Left Blank					
33		Total Plant	$ 30,451,537	$ 61	$ 30,451,476		$ 809,686
34							
35		Composite Depreciation Rate:	2.00%				
36		CIAC:	$ 6,338,423				
37		Amortization of CIAC (Line 35 x Line 36):	$ 126,768				
38							
39		Depreciation Expense Before Amortization of CIAC:	$ 809,686				
40		Less Amortization of CIAC:	$ 126,768				
41		**Test Year Depreciation Expense - Staff:**	**$ 682,918**				
42		Depreciation Expense - Company:	$ 672,842				
43		**Staff's Total Adjustment:**	**$ 10,076**				

References:
Column [A]: Schedule JMM-4
Column [B]: From Column [A]
Column [C]: Column [A] - Column [B]
Column [D]: Engineering Staff Report
Column [E]: Column [C] x Column [D]

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Schedule JMM-17

OPERATING INCOME ADJUSTMENT NO. 8 - TEST YEAR INCOME TAXES

LINE NO.	DESCRIPTION	COMPANY PROPOSED	STAFF ADJUSTMENTS	STAFF RECOMMENDED
1	Federal Income Taxes	$ 51,093	$ 20,597	$ 71,690
2	State Income Taxes	11,255	4,538	15,793
3	Federal and State Income Taxes	$ 62,348	$ 25,134	$ 87,482

References:
Column (A), Company Schedule C-1
Column (B): Column [C] - Column [A]
Column (C): Schedule JMM-2

Arizona Water Company - Navajo
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Schedule JMM-18

OPERATING INCOME ADJUSTMENT NO. 9 - PROPERTY TAX EXPENSE

LINE NO.	Property Tax Calculation	[A] STAFF AS ADJUSTED	[B] STAFF RECOMMENDED
1	Staff Adjusted Test Year Revenues	$ 3,663,830	$ 3,663,830
2	Weight Factor	2	2
3	Subtotal (Line 1 * Line 2)	7,327,660	$ 7,327,660
4	Staff Recommended Revenue, Per Schedule JMM-1	3,663,830	$ 4,198,543
5	Subtotal (Line 4 + Line 5)	10,991,490	11,526,203
6	Number of Years	3	3
7	Three Year Average (Line 5 / Line 6)	3,663,830	$ 3,842,068
8	Department of Revenue Mutilplier	2	2
9	Revenue Base Value (Line 7 * Line 8)	7,327,660	$ 7,684,135
10	Plus: 10% of CWIP -	-	-
11	Less: Net Book Value of Licensed Vehicles	-	$ -
12	Full Cash Value (Line 9 + Line 10 - Line 11)	7,327,660	$ 7,684,135
13	Assessment Ratio	20.0%	20.0%
14	Assessment Value (Line 12 * Line 13)	1,465,532	$ 1,536,827
15	Composite Property Tax Rate (Per Company Schedule)	10.1659%	10.1659%
16			
17	Staff Test Year Adjusted Property Tax (Line 14 * Line 15)	$ 148,985	
18	Company Proposed Property Tax	119,773	
19			
20	Staff Test Year Adjustment (Line 17-Line 18)	$ 29,212	
21	Property Tax - Staff Recommended Revenue (Line 14 * Line 15)		$ 156,233
22	Staff Test Year Adjusted Property Tax Expense (Line 17)		$ 148,985
23	Increase in Property Tax Expense Due to Increase in Revenue Requirement		$ 7,248
24			
25	Increase to Property Tax Expense		$ 7,248
26	Increase in Revenue Requirement		534,713
27	Increase to Property Tax per Dollar Increase in Revenue (Line25/Line 26)		1.355457%

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DIRECT TESTIMONY OF Jeffrey M. Michlik

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Schedule JMM-1

REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	(A) COMPANY FAIR VALUE	(B) STAFF FAIR VALUE
1	Adjusted Rate Base	$ 26,134,793	$ 25,991,704
2	Adjusted Operating Income (Loss)	$ 1,134,775	$ 1,209,649
3	Current Rate of Return (L2 / L1)	4.34%	4.65%
4	Required Rate of Return	9.11%	7.9%
5	Required Operating Income (L4 * L1)	$ 2,380,736	$ 2,053,345
6	Operating Income Deficiency (L5 - L2)	$ 1,245,961	$ 843,695
7	Gross Revenue Conversion Factor	1.6465	1.6465
8	Required Revenue Increase (L7 * L6)	$ 2,051,496	**$ 1,389,159**
9	Adjusted Test Year Revenue	$ 6,529,576	$ 6,592,779
10	Proposed Annual Revenue (L8 + L9)	$ 8,581,072	$ 7,981,938
11	Required Increase in Revenue (%)	31.42%	21.07%

References:
Column (A): Company Schedule A-1
Column (B): Staff Schedules JMM-3 and JMM-7

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Schedule JMM-2

GROSS REVENUE CONVERSION FACTOR

LINE NO.	DESCRIPTION	(A)	(B)	(C)	(D)
	Calculation of Gross Revenue Conversion Factor:				
1	Revenue	100.0000%			
2	Uncollecible Factor (Line 11)	0.0000%			
3	Revenues (L1 - L2)	100.0000%			
4	Combined Federal and State Income Tax and Property Tax Rate (Line 23)	39.2657%			
5	Subtotal (L3 - L4)	60.7343%			
6	**Revenue Conversion Factor (L1 / L5)**	1.646517			
	Calculation of Uncollecttible Factor:				
7	Unity	100.0000%			
8	Combined Federal and State Tax Rate (Line 23)	38.5989%			
9	One Minus Combined Income Tax Rate (L7 - L8)	61.4011%			
10	Uncollectible Rate	0.0000%			
11	Uncollectible Factor (L9 * L10)	0.0000%			
	Calculation of Effective Tax Rate:				
12	Operating Income Before Taxes (Arizona Taxable Income)	100.0000%			
13	Arizona State Income Tax Rate	6.9680%			
14	Federal Taxable Income (L12 - L13)	93.0320%			
15	Applicable Federal Income Tax Rate (Line 55)	34.0000%			
16	Effective Federal Income Tax Rate (L14 x L15)	31.6309%			
17	Combined Federal and State Income Tax Rate (L13 +L16)		38.5989%		
	Calculation of Effective Property Tax Factor				
18	Unity	100.0000%			
19	Combined Federal and State Income Tax Rate (L17)	38.5989%			
20	One Minus Combined Income Tax Rate (L18-L19)	61.4011%			
21	Property Tax Factor (JMM-17, L27)	1.0861%			
22	Effective Property Tax Factor (L20*L21)		0.6669%		
23	Combined Federal and State Income Tax and Property Tax Rate (L17+L22)			39.2657%	
24	Required Operating Income (Schedule JMM-1, Line 5)	$ 2,053,345			
25	AdjustedTest Year Operating Income (Loss)	1,209,649			
26	Required Increase in Operating Income (L24 - L25)		$ 843,695		
27	Income Taxes on Recommended Revenue (Col. [E], L52)	$ 751,607			
28	Income Taxes on Test Year Revenue (Col. [B], L52)	221,231			
29	Required Increase in Revenue to Provide for Income Taxes (L27 - L28)		530,376		
30	Recommended Revenue Requirement (Schedule JMM-1, Line 10)	$ 7,981,938			
31	Uncollectible Rate (Line 10)	0.0000%			
32	Uncolllectible Expense on Recommended Revenue (L30*L31)	$ -			
33	Adjusted Test Year Uncollectible Expense	$ -			
34	Required Increase in Revenue to Provide for Uncollectible Exp. (L32-L33)		-		
35	Property Tax with Recommended Revenue (JMM-17, Col B, L31)	$ 229,893			
36	Property Tax on Test Year Revenue (JMM-17, Col A, L17)	214,806			
37	Increase in Property Tax Due to Increase in Revenue (L35-L36)		15,087		
38	Total Required Increase in Revenue (L26 + L29 + L34 + L37)		$ 1,389,159		

LINE NO.	*Calculation of Income Tax:*	Test Year		Staff Recommended
39	Revenue (Schedule JMM-7, Col. [C], Line 5 & Sch. JMM-1, Col. [D] Line 10)	$ 6,592,779	$ 1,389,159	$ 7,981,938
40	Operating Expenses Excluding Income Taxes	$ 5,161,899		$ 5,176,986
41	Synchronized Interest (L56)	$ 857,726		$ 857,726
42	Arizona Taxable Income (L39 - L40 - L41)	$ 573,154		$ 1,947,226
43	Arizona State Income Tax Rate	6.9680%		6.9680%
44	Arizona Income Tax (L42 x L43)	$ 39,937		$ 135,683
45	Federal Taxable Income (L42 - L44)	$ 533,217		$ 1,811,543
46	Federal Tax on First Income Bracket ($1 - $50,000) @ 34%	$ 17,000		$ 17,000
47	Federal Tax on Second Income Bracket ($51,001 - $75,000) @ 34%	$ 8,500		$ 8,500
48	Federal Tax on Third Income Bracket ($75,001 - $100,000) @ 34%	$ 8,500		$ 8,500
49	Federal Tax on Fourth Income Bracket ($100,001 - $335,000) @ 34%	$ 79,900		$ 79,900
50	Federal Tax on Fifth Income Bracket ($335,001 -$10,000,000) @ 34%	$ 67,394		$ 502,025
51	Total Federal Income Tax	$ 181,294		$ 615,925
52	Combined Federal and State Income Tax (L44 + L51)	$ 221,231		$ 751,607
53	Applicable Federal Income Tax Rate [Col. [E], L51 - Col. [B], L51] / [Col. [E], L45 - Col. [B], L45]			34.0000%
	Calculation of Interest Synchronization:			
54	Rate Base (Schedule JMM-3, Col. (C), Line 17	$ 25,991,704		
55	Weighted Average Cost of Debt	3.3000%		
56	Synchronized Interest (L45 X L46)	$ 857,726		

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Schedule JMM-3

RATE BASE - ORIGINAL COST

LINE NO.			(A) COMPANY AS FILED		(B) STAFF ADJUSTMENTS	Adj. No.		(C) STAFF AS ADJUSTED
1	Plant in Service	$	53,950,969	$	632	1	$	53,951,601
2	Less: Accumulated Depreciation		13,444,799		238			13,445,037
3	Net Plant in Service	$	40,506,170	$	394		$	40,506,565
4								
5	*LESS:*							
6								
7	Contributions in Aid of Construction (CIAC)	$	10,153,446	$	-		$	10,153,446
8	Less: Accumulated Amortization		2,484,339		-		$	2,484,339
9	Net CIAC		7,669,107		-		$	7,669,107
10								
11	Advances in Aid of Construction (AIAC)		3,631,836		-			3,631,836
12								
13	Customer Deposits		47,763		-			47,763
14								
15	Deferred Income Tax Credits		3,654,138		-			3,654,138
16								
17								
18	*ADD:*							
19								
20								
21	Working Capital		631,466		(143,482)	3		487,984
22								
23	Deferred Regulatory Assets		-		-			-
24								
25								
26	**Original Cost Rate Base**	$	26,134,793	$	(143,089)		$	25,991,704

References:
Column [A]: Company as Filed
Column [B]: Schedule JMM-4
Column (C): Column (A) + Column (B)

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Schedule JMM-4

SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

LINE NO.	ACCT. NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJ #1 Plant True-Up Ref: Sch JMM-5	[C] ADJ #2 Not Used Ref: Sch JMM-6	[D] ADJ #3 Cash Working Capital Ref: Sch JMM-7	[E] STAFF ADJUSTED
		PLANT IN SERVICE:					
1							
2	301	Organization Cost	$ 82	$ -	$ -	$ -	$ 82
3	302	Franchise Cost	935	-	-	-	$ 935
4	303	Other Intangibles	3,502	-	-	-	$ 3,502
5	310.1	Water Rights	156,168	-	-	-	$ 156,168
6	310.3	Other Source of Supply Land	631,671	-	-	-	$ 631,671
7	310.4	Wells - Other	-	-	-	-	$ -
8	314	Wells	6,488,999	-	-	-	$ 6,488,999
9	320	Pumping Plant Land	5,544	-	-	-	$ 5,544
10	321	Pumping Plant Structures & Improvements	108,350	-	-	-	$ 108,350
11	325	Electric Pumping Equipment	3,214,908	-	-	-	$ 3,214,908
12	328	Gas Engine Equipment	223	-	-	-	$ 223
13	330	Water Treatment Plant - Land	-	-	-	-	$ -
14	331	Water Treatment Structures and Improvements	269,532	-	-	-	$ 269,532
15	332	Water Treatment Equipment	6,554,509	1,533	-	-	$ 6,556,042
16	340	Transmission and Distribution - Land	134,524	-	-	-	$ 134,524
17	342	Storage Tanks	1,782,264	-	-	-	$ 1,782,264
18	343	Transmission and Distribution Mains	23,684,412	(10,494)	-	-	$ 23,673,918
19	344	Fire Sprinkler Taps	751,183	-	-	-	$ 751,183
20	345	Services	5,275,385	1,342	-	-	$ 5,276,727
21	346	Meters	823,214	-	-	-	$ 823,214
22	348	Hydrants	2,121,468	-	-	-	$ 2,121,468
23	389	General Plant Land	2,858			-	$ 2,858
24	390	General Plant Structures	215,353	-	-	-	$ 215,353
25	390.1	Leasehold Improvements	243,870	-	-	-	$ 243,870
26	391	Office Furniture & Equipment	787,137	(704)	-	-	$ 786,433
27	393	Warehouse Equipment	39,312	-	-	-	$ 39,312
28	394	Tools, Shops, and Garage Equipment	154,450	543	-	-	$ 154,993
29	395	Laboratory Equipment	14,037	-	-	-	$ 14,037
30	396	Power Operated Equipment	52,786	-	-	-	$ 52,786
31	397	Communications Equipment	399,821	8,413			$ 408,234
32	398	Miscellaneous Equipment	34,471				$ 34,471
33		Intentionally Left Blank		-	-	-	$ -
34		Total Plant in Service	$ 53,950,969	$ 633	$ -	$ -	$ 53,951,601
35							
36		Less: Accumulated Depreciation	13,444,799	238	-	-	13,445,037
37			-	-	-	-	-
38		Net Plant in Service	$ 40,506,170	$ 395	$ -	$ -	$ 40,506,565
39							
40		*LESS:*					
41		Contributions in Aid of Construction (CIAC)	$ 10,153,446	$ -	$ -	$ -	$ 10,153,446
42		Less: Accumulated Amortization	2,484,339	-	-	-	2,484,339
43		Net CIAC (L25 - L26)	7,669,107	-	-	-	7,669,107
44		Advances in Aid of Construction (AIAC)	3,631,836	-	-	-	3,631,836
45		Customer Deposits	47,763	-	-	-	47,763
46		Deferred Income Taxes	3,654,138	-	-	-	3,654,138
47							
48							
49		*ADD:*					
50		Working Capital	631,466	-	-	(143,482)	487,984
51		Deffered Regulatory Assets	-	-	-	-	-
52							
53		**Original Cost Rate Base**	$ 26,134,793	$ 395	$ -	$ (143,482)	$ 25,991,704

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Schedule JMM-5

RATE BASE ADJUSTMENT NO. 1 - STAFF POST-TEST YEAR TRUE-UP

LINE NO.	ACCT NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	332	Water Treatment Equipment	$ 6,554,509	$ 1,533	$ 6,556,042
2	343	Transmission & Distribution Mains	23,684,412	(10,494)	23,673,918
3	345	Services	5,275,385	1,342	5,276,727
4	397	Communications Equipment	399,821	8,413	408,234
5			$ 35,914,127	$ 794	$ 35,914,921
		Accumulated Depreciation	$ 13,444,799	$ 225	$ 13,445,024
6					
7		Phoenix Meter Shop			
8	391	Office Furniture and Equipment	$ 787,137	$ (704)	$ 786,433
9	394	Tools, Shop & Garage Equipment	154,450	543	154,993
10			$ 941,587	$ (161)	$ 941,426
		Accumulated Depreciation	$ 13,445,024	$ 13	$ 13,445,037

REFERENCES:
Column [A]: Company Filing
Column [B]: Testimony JMM
Column [C]: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 2 - NOT USED

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Schedule JMM-7

RATE BASE ADJUSTMENT NO. 3 - CASH WORKING CAPITAL

			[A]	[B]	[C]	[D]	[E]	[F]
LINE NO.	**ACCT NO.**	**DESCRIPTION**	**COMPANY PROPOSED**	**STAFF ADJUSTMENTS**	**STAFF RECOMMENDED**			
1		Working Capital	$ 631,466	$ (143,482)	$ 487,984			
2								
3								
4								
5			Test Year			Net	Lead / Lag	Working Cash
6			Adjusted	Revenue	Expense	Lag Days	Factor	Requirement
7			Results			[B - C]	[D ÷ 365]	[A X E]
8		Staff's Calculation						
9		Purchased Power	$ 635,560	28.82	30.87	(2.05)	(0.0056)	$ (3,573)
10		Payroll	1,306,798	28.82	14.00	14.82	0.0406	53,052
11		Purchased Water	-	28.82	30.47	(1.65)	(0.0045)	-
12		Chemicals	26,279	28.82	(18.11)	46.93	0.1286	3,379
13		Property & Liability Insurance	65,502	28.82	(45.27)	74.09	0.2030	13,296
14		Workman's Compensation Insurance	12,183	28.82	(46.50)	75.32	0.2064	2,514
15		Health Insurance	223,971	28.82	(8.92)	37.74	0.1034	23,157
16		Other O&M (Excluding Rate Case Expense)	1,209,062	28.82	(9.27)	38.09	0.1044	126,166
17		Federal Income Taxes	615,925	28.82	37.00	(8.18)	(0.0224)	(13,807)
18		State Income Taxes	135,683	28.82	37.00	(8.18)	(0.0224)	(3,042)
19		FICA Taxes	97,861	28.82	14.00	14.82	0.0406	3,973
20		FUTA & SUTA Taxes	3,253	28.82	83.10	(54.28)	(0.1487)	(484)
21		Property Taxes	229,893	28.82	212.00	(183.18)	(0.5019)	(115,376)
22		Registration, Svc. Contracts, & Misc. Fees	84,930	28.82	(98.83)	127.65	0.3497	29,702
23		Retirement Annuities (401k)	106,531	28.82	34.72	(5.90)	(0.0162)	(1,723)
24								
25								
26			$ 4,753,430					$ 117,235
27		Subtotal						
28								
29		Interest Expense	873,077	28.82	91.25	(62.43)	(0.1710)	(149,337)
30			-	-	-	-	-	-
31								
32		Subtotal	$ 873,077					$ (149,337)
33								
34								
35		Total	5,626,507					$ (32,102)
36								
37		Company Cash Working Capital						$ 111,380
38								
39		Increase/(Decrease)						$ (143,482)

REFERENCES:
Column [A]: Company Filing
Column [B]: Direct Testimony JMM
Column [C]: Column [A] + Column [B]

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Schedule JMM-8

OPERATING INCOME STATEMENT - ADJUSTED TEST YEAR AND STAFF RECOMMENDED

LINE NO.	DESCRIPTION	[A] COMPANY ADJUSTED TEST YEAR AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF PROPOSED CHANGES	[E] STAFF RECOMMENDED
1	*OPERATING REVENUES:*					
2	Residential	$ 4,870,565	$ 63,203	$ 4,933,768	$ 1,389,159	$ 6,322,927
3	Commercial	1,544,126	-	1,544,126	-	1,544,126
4	Industrial	3,699	-	3,699	-	3,699
5	Private Fire Service	45,049		45,049		45,049
6	Other Water Revenues	4,820	-	4,820	-	4,820
7	Total Water Revenues	$ 6,468,259	$ 63,203	$ 6,531,462	$ 1,389,159	$ 7,920,621
8						
9	Miscellaneous	61,317.00		61,317.00		61,317
10	Total Operating Revenues	$ 6,529,576	$ -	$ 6,592,779	$ 1,389,159	$ 7,981,938
11						
12	*OPERATING EXPENSES:*					
13	Source of Supply Expenses					
14	Purchased Water	$ -	$ -	$ -	$ -	$ -
15	Other	45,038	885	45,923	-	45,923
16	Pumping Expenses					
17	Purchased Power	635,560	-	635,560	-	635,560
18	Purchased Gas	-	-	-	-	-
19	Other	232,130	18,802	250,932	-	250,932
20	Water Treatment Expenses	595,425	10,880	606,305	-	606,305
21	Transmission and Distribution Expenses	748,581	(53,298)	695,283	-	695,283
22	Customer Accounting Expenses	548,622	-	548,622	-	548,622
23	Sales Expense	1,177	-	1,177	-	1,177
24	Administrative and General Expenses	958,968	(46,028)	912,940	-	912,940
25	Total Operation and Maintenance Expense	3,765,503	(68,761)	3,696,742	-	3,696,742
26						
27	Depreciation and Amortization Expenses	1,166,958	(1,689)	1,165,269	-	1,165,269
28						
29	Taxes					
30	Federal Income Taxes	134,814	46,480	181,294	434,631	615,925
31	State Income Taxes	29,698	10,239	39,937	95,745	135,683
32	Property Taxes	212,747	2,059	214,806	15,087	229,893
33	Other	85,082	-	85,082	-	85,082
34	Total Taxes	462,341	58,778	521,119	545,463	1,066,582
35		-	-	-	-	-
36		-	-	-	-	-
37	Total Operating Expenses	5,394,801	-	5,383,130	545,463	5,928,593
38						
39	Operating Income (Loss)	$ 1,134,775	$ 74,874	$ 1,209,649	$ 843,695	$ 2,053,345

References:
Column (A): Company Schedule C-1
Column (B): Schedule JMM-9
Column (C): Column (A) + Column (B)
Column (D): Schedules JMM-17 and JMM-18
Column (E): Column (C) + Column (D)

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Schedule JMM-9

SUMMARY OF OPERATING INCOME STATEMENT ADJUSTMENTS - TEST YEAR

LINE NO.	ACCT. NO. / DESCRIPTION	[A] COMPANY AS FILED	[B] Reverse Weatherization ADJ #1 Ref: Sch JMM-10	[C] Fleet Fuel Expense ADJ #2 Ref: Sch JMM-11	[D] Removal of Pumping Transmission and Distribution Projection ADJ #3 Ref: Sch JMM-12	[E] Administrative and General Expense Adjustment ADJ #4 Ref: Sch JMM-13	[F] Remove Additional BMP Expenses ADJ #5 Ref: Sch JMM-14	[G] Rate Case Expense ADJ #6 Ref: Sch JMM-15	[H] Depreciation Expense ADJ #7 Ref: Sch JMM-16	[I] Income Tax Expense ADJ #8 Ref: Sch JMM-17	[J] Property Expense ADJ #9 Ref: Sch JMM-18	[K] STAFF ADJUSTED
1	*OPERATING REVENUES:*											
2	Residential	$ 4,870,565	$ 63,203	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,933,768
3	Commercial	1,544,126	-	-	-	-	-	-	-	-	-	1,544,126
4	Industrial	3,699	-	-	-	-	-	-	-	-	-	3,699
5	Private Fire Service	45,049	-	-	-	-	-	-				45,049
6	Other Water Revenues	4,820	-	-	-	-	-	-	-	-	-	4,820
7	Total Water Revenues	$ 6,468,259	$ 63,203	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,531,462
8												
9	Miscellaneous	$ 61,317										$ 61,317
10	Total Operating Revenues	$ 6,529,576	$ 63,203	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,592,779
11												
12	*OPERATING EXPENSES:*											
13	Source of Supply Expenses											
14	Purchased Water	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
15	Other	45,038	885	-	-	-	-	-	-	-	-	45,923
16	Pumping Expenses								-	-	-	
17	Purchased Power	635,560	-	-	-	-	-	-	-	-	-	635,560
18	Purchased Gas	-	-	-	-	-	-	-	-	-	-	-
19	Other	232,130	18,802	-	-	-	-	-	-	-	-	250,932
20	Water Treatment Expenses	595,425	10,880	-	-	-	-	-	-	-	-	606,305
21	Transmission and Distribution Expenses	748,581	-	-	(53,298)	-	-	-	-	-	-	695,283
22	Customer Accounting Expenses	548,622	-	-	-	-	-	-	-	-	-	548,622
23	Sales Expense	1,177	-	-	-	-	-	-	-	-	-	1,177
24	Administrative and General Expenses	958,968	-	-	-	(1,217)	(23,575)	(21,235)	-	-	-	912,940
25	Total Operation and Maintenance Expense	$ 3,765,502	$ 30,567	$ -	$ (53,298)	$ (1,217)	$ (23,575)	$ (21,235)	$ -	$ -	$ -	$ 3,696,742
26									-	-	-	
27	Depreciation and Amortization Expenses	1,166,958	-	-	-	-	-	-	(1,689)	-	-	1,165,269
28									-	-	-	
29	Taxes								-	-	-	
30	Federal Income Taxes	134,814	-	-	-	-	-	-	-	46,480	-	181,294
31	State Income Taxes	29,698	-	-	-	-	-	-	-	10,239	-	39,937
32	Property Taxes	212,747	-	-	-	-	-	-	-	-	2,059	214,806
33	Other	85,082	-	-	-	-	-	-	-	-	-	85,082
34	Total Taxes	$ 462,341	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 56,719	$ 2,059	$ 521,119
35		-	-	-	-	-		-	-	-	-	-
36	Total Operating Expenses	$ 5,394,801	$ 30,567	$ -	$ (53,298)	$ (1,217)	$ (23,575)	$ (21,235)	$ (1,689)	$ 56,719	$ 2,059	$ 5,383,130
37									$ -	$ -	$ -	
38	Operating Income (Loss)	$ 1,134,775	$ 32,636	$ -	$ 53,298	$ 1,217	$ 23,575	$ 21,235	$ 1,689	$ (56,719)	$ (2,059)	$ 1,209,649

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Schedule JMM-10

OPERATING INCOME ADJUSTMENT NO. 1 - REVERSE WEATHERIZATION

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF[1] RECOMMENDED
1	Residential	$ 4,870,565	$ 63,203	$ 4,933,768
2	Commercial	1,544,126	-	1,544,126
3	Industrial	3,699	-	3,699
4	Revenue Adjustments	$ 6,418,390	$ 63,203	$ 6,481,593
5				
6	Source Supply - Other	$ 45,923	$ -	$ 45,923
7	Weather Normalization Expense	(885)	885	-
8	Total Source Supply - Other	$ 45,038	$ 885	$ 45,923
9				
10	Purchased Power	$ 635,560	$ -	$ 635,560
11	Weather Normalization Expense	-	-	-
12	Total Purchased Power	$ 635,560	$ -	$ 635,560
13				
14	Pumping Expense - Other	$ 250,932	$ -	$ 250,932
15	Weather Normalization Expense	(18,802)	18,802	-
16	Total Pumping Expense - Other	$ 232,130	$ 18,802	$ 250,932
17				
18	Water Treatment Expenses	$ 606,305	$ -	$ 606,305
19	Weather Normalization Expense	(10,880)	10,880	-
20	Total Water Treatment Expenses	$ 595,425	$ 10,880	$ 606,305
21				
22	Transmission and Distribution Expenses	$ 748,581	$ -	$ 748,581
23		-	-	-
24	Total Transmission and Distribution Expenses	$ 748,581	$ -	$ 748,581
25				
26	Customer Accounting Expenses	$ 548,622	$ -	$ 548,622
27	Weather Normalization Expense	-	-	-
28	Total Customer Accounting Expenses	$ 548,622	$ -	$ 548,622
29				
30	Administrative and General Expenses	$ 958,968	$ -	$ 958,968
31	Weather Normalization Expense	-	-	-
32	Total Administrative and General Expenses	$ 958,968	$ -	$ 958,968
33				
34	Total Expense Adjustments	$ 3,764,324	$ 30,567	$ 3,794,891

[1] Amounts do not reflect other adjustments.

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-11

OPERATING INCOME ADJUSTMENT NO. 2 - FLEET FUEL EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF[1] RECOMMENDED
1	Source Supply - Other	$ 6,529,522	$ -	$ 6,529,522
2	Fleet Fuel Expenses	54	-	54
3	Total Source Supply - Other	$ 6,529,576	$ -	$ 6,529,576
4				
5	Pumping Expense - Other	$ 231,515	$ -	$ 231,515
6	Fleet Fuel Expenses	615	-	615
7	Total Pumping Expense - Other	$ 232,130	$ -	$ 232,130
8				
9	Water Treatment Expenses	$ 595,259	$ -	$ 595,259
10	Fleet Fuel Expenses	166	-	166
11	Total Water Treatment Expenses	$ 595,425	$ -	$ 595,425
12				
13	Transmission and Distribution Expenses	$ 715,863	$ -	$ 715,863
14	Fleet Fuel Expenses	32,718	-	32,718
15	Total Transmission and Distribution Expenses	$ 748,581	$ -	$ 748,581
16				
17	Customer Accounting Expenses	$ 539,803	$ -	$ 539,803
18	Fleet Fuel Expenses	8,819	-	8,819
19	Total Customer Accounting Expenses	$ 548,622	$ -	$ 548,622
20				
21	Administrative and General Expenses	$ 958,796	$ -	$ 958,796
22	Fleet Fuel Expenses	172	-	172
23	Total Administrative and General Expenses	$ 958,968	$ -	$ 958,968
24				
25	Total Expense Adjustments	$ 9,613,302	$ -	$ 9,613,302
26				
27				
28	Staff's Calculation based on the most recent 12 month gas price			
29				
30		Company Pro-forma	Staff's Recalculation	Adjustment
31	Source Supply - Other	$ 54	$ 54	$ -
32	Pumping Expenses Other	615	615	$ -
33	Water Treatment Expenses	166	166	$ -
34	Transmission and Distribution Expenses	1,893	1,893	$ -
35	Customer Accounting Expenses	506	506	$ -
36	Administrative and General Expenses	172	172	-
37	Totals	$ 3,406	$ 3,406	$ -

[1] Amounts do not reflect other adjustments.

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-12

OPERATING INCOME ADJUSTMENT NO. 3 - REMOVAL OF PROJECTED EXPENSES

		[A]	[B]	[C]
LINE NO.	**DESCRIPTION**	**COMPANY PROPOSED**	**STAFF ADJUSTMENTS**	**STAFF[1] RECOMMENDED**
1	Transmission and Distribution Expenses	$ 682,377	$ -	$ 682,377
2	Normalization of Transmission and Distribution Expenses	66,204	(53,298)	12,906
3	Total Transmission and Distribution Expenses	$ 748,581	$ (53,298)	$ 695,283

[1] Amounts do not reflect other adjustments.

Staff Calculation		
2007	$	257,650
2008	$	278,058
2009	$	330,457
2010	$	294,435
2011	$	274,018
Sub-total	$	1,434,618
5-year average	$	286,923.60
Test year recorded amount	$	274,018
Pro forms Increase/(decrease)	$	12,906

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-13

OPERATING INCOME ADJUSTMENT NO. 4 - ADMINISTRATIVE AND GENERAL EXPENSE ADJUSTMENT

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF[1] RECOMMENDED
1	Administrative and General Expenses	$ 958,968	$ (1,217)	$ 957,751

Direct Expenses		Navajo	Verde Valley
Membership Dues at 50% of Total	$ 413	$ 188	$ 225
Charitable Contributions		100	
Sponsorships		800	
Gifts and Awards		176	
Christmas Luncheon		300	
Total Direct Expenses		$ 1,564	$ 225

Allocated Costs		Navajo 0.0943	Verde Valley 0.1252	Allocation Percentage
Membership Dues at 50% of Total	$ 944	$ 89	$ 118	
Gifts and Awards	1040.28	98	130	
Luncheons	1869.29	176	234	
Awards Banquet	4072.63	384	510	
Total Allocated Costs		$ 747	$ 992	
Total Administrative and General Expenses		$ 2,311	$ 1,217	

[1] Amounts do not reflect other adjustments.

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-14

OPERATING INCOME ADJUSTMENT NO. 5 - REMOVAL OF ADDITIONAL BMP COSTS

		[A]	[B]	[C]
LINE NO.	**DESCRIPTION**	**COMPANY PROPOSED**	**STAFF ADJUSTMENTS**	**STAFF[1] RECOMMENDED**
1	Administrative and General Expenses	$ 935,393	$ -	$ 935,393
2	Removal of Additional BMP Costs	23,575	(23,575)	-
3	Total Administrative and General	$ 958,968	$ (23,575)	$ 935,393

[1] Amounts do not reflect other adjustments.

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-15

OPERATING INCOME ADJUSTMENT NO. 6 - RATE CASE EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF[1] RECOMMENDED
1	Administrative and General Expenses	$ 896,492	$ -	$ 896,492
2	Rate Case Expense Pro Forma	62,476	(21,235)	41,241
3	Total Administrative and General	$ 958,968	$ (21,235)	$ 937,733

LINE NO.			Average Number of Customers	[A] T.Y. 2011 Rate Case Expense Estimate / Spread	[B] Normalization Period in Years	[C] Annual Amortization / Pro Forma Rate Case Exp.	[D] T.Y. 2011 Prior Rate Case Expense Charged to O&M - 928.2	[E] Increase / (Decrease)
4								
5								
6	Staff's Calculation of Rate Case Expense for Verde Valley							
7								
8								
9								
10								
11								
12								
13	System							
14								
15								
16	Commission Rate Case Expense	Navajo	9,090	$ 161,837				
17		Verde Valley	10,569	188,163	3	$ 62,721	$ 21,480	$ 41,241
18			19,659	$ 350,000				
19								
20				$ 350,000				
21								
22	Company Proposed Rate Case Expense Pro Forma							$ 62,476
23								
24	Staff Adjustment to Rate Case Expense (L17-L22)							$ (21,235)

[1] Amounts do not reflect other adjustments.

References:
Column (A), Company Schedule C-1
Column (B): Testimony JMM
Column (C): Column (A) + Column (B)

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Schedule JMM-16

OPERATING INCOME ADJUSTMENT NO. 7 - NOT USED

LINE NO.	ACCT NO.	DESCRIPTION	[A] PLANT In SERVICE Per Staff	[B] NonDepreciable or Fully Depreciated PLANT	[C] DEPRECIABLE PLANT (Col A - Col B)	[D] DEPRECIATION RATE	[E] DEPRECIATION EXPENSE (Col C x Col D)
1	301	Organization Cost	$ 82	$ 82	$ (0)	0.00%	$ -
2	302	Franchise Cost	$ 935	$ -	$ 935	4.00%	$ 37
3	303	Other Intangibles	$ 3,502	$ -	$ 3,502	5.00%	$ 175
4	310.1	Water Rights	$ 156,168	$ -	$ 156,168	0.00%	$ -
5	310.3	Other Source of Supply Land	$ 631,671	$ -	$ 631,671	0.00%	$ -
6	310.4	Wells - Other	$ -	$ -	$ -	2.50%	$ -
7	314	Wells	$ 6,488,999	$ -	$ 6,488,999	3.13%	$ 203,106
8	320	Pumping Plant Land	$ 5,544	$ -	$ 5,544	0.00%	$ -
9	321	Pumping Plant Structures & Improvements	$ 108,350	$ -	$ 108,350	2.86%	$ 3,099
10	325	Electric Pumping Equipment	$ 3,214,908	$ -	$ 3,214,908	5.88%	$ 189,037
11	328	Gas Engine Equipment	$ 223	$ -	$ 223	4.00%	$ 9
12	330	Water Treatment Plant - Land	$ -	$ -	$ -	0.00%	$ -
13	331	Water Treatment Structures and Improvements	$ 269,532	$ -	$ 269,532	2.50%	$ 6,738
14	332	Water Treatment Equipment	$ 6,556,042	$ -	$ 6,556,042	2.86%	$ 187,503
15	340	Transmission and Distribution - Land	$ 134,524	$ -	$ 134,524	0.00%	$ -
16	342	Storage Tanks	$ 1,782,264	$ -	$ 1,782,264	2.00%	$ 35,645
17	343	Transmission and Distribution Mains	$ 23,673,918	$ -	$ 23,673,918	1.79%	$ 423,763
18	344	Fire Sprinkler Taps	$ 751,183	$ -	$ 751,183	2.00%	$ 15,024
19	345	Services	$ 5,276,727	$ -	$ 5,276,727	2.38%	$ 125,586
20	346	Meters	$ 823,214	$ -	$ 823,214	4.55%	$ 37,456
21	348	Hydrants	$ 2,121,468	$ -	$ 2,121,468	1.82%	$ 38,611
22	389	General Plant Land	$ 2,858	$ -	$ 2,858	0.00%	$ -
23	390	General Plant Structures	$ 215,353	$ -	$ 215,353	2.50%	$ 5,384
24	390.1	Leasehold Improvements	$ 243,870	$ -	$ 243,870	1.62%	$ 3,945
25	391	Office Furniture & Equipment	$ 786,433	$ -	$ 786,433	6.67%	$ 52,455
26	393	Warehouse Equipment	$ 39,312	$ -	$ 39,312	5.00%	$ 1,966
27	394	Tools, Shops, and Garage Equipment	$ 154,993	$ -	$ 154,993	4.00%	$ 6,200
28	395	Laboratory Equipment	$ 14,037	$ -	$ 14,037	5.00%	$ 702
29	396	Power Operated Equipment	$ 52,786	$ -	$ 52,786	6.67%	$ 3,521
30	397	Communications Equipment	$ 408,234	$ -	$ 408,234	6.67%	$ 27,229
31	398	Miscellaneous Equipment	$ 34,471	$ -	$ 34,471	3.33%	$ 1,148
32		Intentionally Left Blank					
33		Total Plant	$ 53,951,601	$ 82	$ 53,950,585		$ 1,368,338
34							
35		Composite Depreciation Rate:	2.00%				
36		CIAC:	$ 10,153,446				
37		Amortization of CIAC (Line 35 x Line 36):	$ 203,069				
38							
39		Depreciation Expense Before Amortization of CIAC:	$ 1,368,338				
40		Less Amortization of CIAC:	$ 203,069				
41		**Test Year Depreciation Expense - Staff:**	**$ 1,165,269**				
42		Depreciation Expense - Company:	$ 1,166,958				
43		**Staff's Total Adjustment:**	**$ (1,689)**				

References:
Column [A]: Schedule JMM-4
Column [B]: From Column [A]
Column [C]: Column [A] - Column [B]
Column [D]: Engineering Staff Report
Column [E]: Column [C] x Column [D]

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Schedule JMM-17

OPERATING INCOME ADJUSTMENT NO. 8 - TEST YEAR INCOME TAXES

LINE NO.	DESCRIPTION	COMPANY PROPOSED	STAFF ADJUSTMENTS	STAFF RECOMMENDED
1	Federal Income Taxes	$ 134,814	$ 46,480	$ 181,294
2	State Income Taxes	29,698	10,239	39,937
3	Federal and State Income Taxes	$ 164,512	$ 56,719	$ 221,231

References:
Column (A), Company Schedule C-1
Column (B): Column [C] - Column [A]
Column (C): Schedule JMM-2

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Schedule JMM-18

OPERATING INCOME ADJUSTMENT NO. 9 - PROPERTY TAX EXPENSE

LINE NO.	Property Tax Calculation	[A] STAFF AS ADJUSTED	[B] STAFF RECOMMENDED
1	Staff Adjusted Test Year Revenues	$ 6,592,779	$ 6,592,779
2	Weight Factor	2	2
3	Subtotal (Line 1 * Line 2)	13,185,558	$ 13,185,558
4	Staff Recommended Revenue, Per Schedule JMM-1	6,592,779	$ 7,981,938
5	Subtotal (Line 4 + Line 5)	19,778,337	21,167,496
6	Number of Years	3	3
7	Three Year Average (Line 5 / Line 6)	6,592,779	$ 7,055,832
8	Department of Revenue Mutilplier	2	2
9	Revenue Base Value (Line 7 * Line 8)	13,185,558	$ 14,111,664
10	Plus: 10% of CWIP -	-	-
11	Less: Net Book Value of Licensed Vehicles	-	$ -
12	Full Cash Value (Line 9 + Line 10 - Line 11)	13,185,558	$ 14,111,664
13	Assessment Ratio	20.0%	20.0%
14	Assessment Value (Line 12 * Line 13)	2,637,112	$ 2,822,333
15	Composite Property Tax Rate (Per Company Schedule)	8.1455%	8.1455%
16			
17	Staff Test Year Adjusted Property Tax (Line 14 * Line 15)	$ 214,806	
18	Company Proposed Property Tax	212,747	
19			
20	Staff Test Year Adjustment (Line 17-Line 18)	$ 2,059	
21	Property Tax - Staff Recommended Revenue (Line 14 * Line 15)		$ 229,893
22	Staff Test Year Adjusted Property Tax Expense (Line 17)		$ 214,806
23	Increase in Property Tax Expense Due to Increase in Revenue Requirement		$ 15,087
24			
25	Increase to Property Tax Expense		$ 15,087
26	Increase in Revenue Requirement		1,389,159
27	Increase to Property Tax per Dollar Increase in Revenue (Line25/Line 26)		1.086066%

Appendix A

Table I Navajo - Expenses Over the Years and Company's Proforma Adjustment

	[A]	[B]	[C]	[D]	[E]	[F]	[G]
						Column [D]+[E]	Column [F]/[C]
				Acct.	Acct.		
Line		Coded	No.	6730	6750		
No.	Year	Year	Cust.	Mains	Services	Total	$/Cust.
1	1992	0	5,514	$ 39,217	$ 26,203	$ 65,420	$ 11.86
2	1993	1	5,626	46,140	27,903	74,043	13.16
3	1994	2	5,813	51,166	33,856	85,022	14.63
4	1995	3	6,044	49,746	45,216	94,962	15.71
5	1996	4	6,341	70,035	60,721	130,756	20.62
6	1997	5	6,585	73,780	78,434	152,214	23.12
7	1998	6	6,801	95,210	68,645	163,855	24.09
8	1999	7	7,083	72,178	67,550	139,728	19.73
9	2000	8	7,335	77,044	69,609	146,653	19.99
10	2001	9	7,646	80,538	73,774	154,311	20.18
11	2002	10	7,833	72,037	81,157	153,194	19.56
12	2003	11	8,095	68,990	80,191	149,181	18.43
13	2004	12	8,365	87,673	96,864	184,536	22.06
14	2005	13	8,716	80,354	99,510	179,864	20.64
15	2006	14	9,017	88,723	108,697	197,421	21.89
16	2007	15	9,209	92,346	128,126	220,472	23.94
17	2008	16	9,239	71,248	122,538	193,786	20.97
18	2009	17	9,142	78,998	110,296	189,294	20.71
19	2010	18	9,120	82,714	78,671	161,385	17.70
20	2011	19	9,171	77,813	54,538	132,351	14.43
21	Projected Increase						
22	2013						21.71
23	2014						21.93
24	2015						22.15
25							
26	Average of Projected Increase 2013, 2014, and 2015						21.93
27							
28	Customer count line 20, Column [C] 9,171 x line 26, Column [G] $21.93 rounded =						$ 201,087
29							
30	Line 28, Column [G] 201,087 - line 20 Column [F] 132,351 =						$ 68,736

Table I Verde Valley - Expenses Over the Years and Company's Proforma Adjustment

	[A]	[B]	[C]	[D]	[E]	[F]	[G]
						Column [D]+[E]	Column [F]/[C]
				Acct.	Acct.		
Line		Coded	No.	6730	6750		
No.	Year	Year	Cust.	Mains	Services	Total	$/Cust.
1	1992	0	7,498	$ 33,906	$ 23,017	$ 56,923	$ 7.59
2	1993	1	7,648	39,616	26,994	66,610	8.71
3	1994	2	7,819	73,316	33,038	106,354	13.60
4	1995	3	8,082	48,347	44,295	92,642	11.46
5	1996	4	9,800	88,047	83,382	171,429	17.49
6	1997	5	8,736	83,285	80,881	164,166	18.79
7	1998	6	8,909	74,268	80,287	154,555	17.35
8	1999	7	9,169	74,332	101,007	175,339	19.12
9	2000	8	9,399	81,978	89,535	171,513	18.25
10	2001	9	9,600	103,362	81,230	184,593	19.23
11	2002	10	9,845	89,451	109,761	199,212	20.23
12	2003	11	10,098	86,475	103,093	189,568	18.77
13	2004	12	10,256	108,166	96,204	204,370	19.93
14	2005	13	10,370	127,989	126,210	254,199	24.51
15	2006	14	10,509	97,158	168,397	265,555	25.27
16	2007	15	10,593	94,504	163,146	257,650	24.32
17	2008	16	10,594	128,946	149,112	278,058	26.25
18	2009	17	10,576	146,318	184,139	330,457	31.25
19	2010	18	10,596	98,651	195,784	294,435	27.79
20	2011	19	10,567	108,554	165,464	274,018	25.93
21	Projected Increase						
22	2013						31.20
23	2014						32.20
24	2015						33.19
25							
26	Average of Projected Increase 2013, 2014, and 2015						32.20
27							
28	Customer count line 20, Column [C] 10,567 x line 26, Column [G] $32.20 rounded =						$ 340,222
29							
30	Line 28, Column [G] 340,222 - line 20 Column [F] 274,018 =						$ 66,204

Table II	Navajo - Selected Statistical Data				
Year	Y-Intercept or "b"	Change in Expenses per Year or "m"	R Squared	R	P-VALUE
20 YEAR	**$ 17.08**	**$ 0.22**	**13.60%**	**36.87%**	**10.96%**
19 YEAR	$ 18.27	$ 0.13	5.23%	22.86%	34.65%
18 YEAR	$ 19.63	$ 0.03	0.24%	4.93%	84.59%
17 YEAR	$ 21.16	$ (0.09)	2.73%	16.52%	52.63%
16 YEAR	$ 22.98	$ (0.22)	18.06%	42.50%	10.08%
15 YEAR	$ 23.59	$ (0.26)	21.38%	46.23%	8.27%
14 YEAR	$ 23.20	$ (0.23)	15.22%	39.02%	16.78%
13 YEAR	$ 21.88	$ (0.14)	5.80%	24.09%	42.79%
12 YEAR	$ 22.68	$ (0.20)	8.50%	29.16%	35.77%
11 YEAR	$ 23.64	$ (0.26)	11.29%	33.60%	31.24%
10 YEAR	$ 24.86	$ (0.33)	14.27%	37.77%	28.19%
9 YEAR	$ 27.55	$ (0.50)	23.25%	48.21%	18.87%
8 YEAR	$ 34.06	$ (0.89)	54.49%	73.82%	3.65%
7 YEAR	$ 37.32	$ (1.08)	57.04%	75.52%	4.96%
6 YEAR	$ 46.49	$ (1.61)	79.68%	89.26%	1.67%
5 YEAR	$ 57.46	$ (2.23)	95.10%	97.52%	0.47%
4 YEAR	$ 58.07	$ (2.26)	90.94%	95.36%	4.64%
3 YEAR	$ 74.08	$ (3.14)	99.95%	99.97%	1.49%

Table II	Verde Valley - Selected Statistical Data				
Year	Y-Intercept or "b"	Change in Expenses per Year or "m"	R Squared	R	P-VALUE
20 YEAR	**$ 10.37**	**$ 0.99**	**88.10%**	**93.86%**	**0.00%**
19 YEAR	$ 11.00	$ 0.94	86.53%	93.02%	0.00%
18 YEAR	$ 11.84	$ 0.88	85.04%	92.22%	0.00%
17 YEAR	$ 11.84	$ 0.88	82.72%	90.95%	0.00%
16 YEAR	$ 12.90	$ 0.80	80.19%	89.55%	0.00%
15 YEAR	$ 12.34	$ 0.84	79.33%	89.07%	0.00%
14 YEAR	$ 11.26	$ 0.92	80.85%	89.91%	0.00%
13 YEAR	$ 10.92	$ 0.94	78.17%	88.41%	0.01%
12 YEAR	$ 9.79	$ 1.01	78.06%	88.35%	0.01%
11 YEAR	$ 9.50	$ 1.03	74.04%	86.05%	0.07%
10 YEAR	$ 9.03	$ 1.06	69.49%	83.36%	0.27%
9 YEAR	$ 8.23	$ 1.11	64.75%	80.47%	0.89%
8 YEAR	$ 11.21	$ 0.93	50.44%	71.02%	4.84%
7 YEAR	$ 17.21	$ 0.58	27.01%	51.97%	23.19%
6 YEAR	$ 17.98	$ 0.53	16.50%	40.63%	42.41%
5 YEAR	$ 19.02	$ 0.48	8.24%	28.71%	63.95%
4 YEAR	$ 35.51	$ (0.44)	5.46%	23.36%	76.64%
3 YEAR	$ 76.15	$ (2.66)	97.06%	98.52%	10.97%

BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
Chairman
GARY PIERCE
Commissioner
BRENDA BURNS
Commissioner
BOB BURNS
Commissioner
SUSAN BITTER SMITH
Commissioner

IN THE MATTER OF THE APPLICATION OF ARIZONA WATER COMPANY, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY, AND FOR ADJUSTMENTS TO ITS RATES AND CHARGES FOR UTILITY SERVICE FURNISHED BY ITS NORTHERN GROUP AND FOR CERTAIN RELATED APPROVALS	)	DOCKET NO. W-01445A-12-0348

DIRECT

TESTIMONY

OF

KATRIN STUKOV

UTILITIES ENGINEER

ARIZONA CORPORATION COMMISSION

UTILITIES DIVISION

FEBRUARY 28, 2013

TABLE OF CONTENTS

EXHIBITS

INTRODUCTION

Q. Please state your name, place of employment and job title.

A. My name is Katrin Stukov. My place of employment is the Arizona Corporation Commission ("Commission"), Utilities Division, 1200 West Washington Street, Phoenix, Arizona 85007. My job title is Utilities Engineer.

Q. How long have you been employed by the Commission?

A. I have been employed by the Commission since June 2006.

Q. Please list your duties and responsibilities.

A. As a Utilities Engineer, specializing in water and wastewater engineering, I inspect and evaluate water and wastewater systems; obtain data, prepare reports; suggest corrective action, provide technical recommendations on water and wastewater system deficiencies; and provide written and oral testimony on rate and other cases before the Commission.

Q. How many cases have you analyzed for the Utilities Division?

A. I have analyzed over 80 cases covering various responsibilities for the Utilities Division.

Q. What is your educational background?

A. I graduated from the Moscow University of Civil Engineering with a Bachelor of Science degree in Civil Engineering with a concentration in water and wastewater systems.

Q. Briefly describe your pertinent work experience.

A. Prior to my employment with the Commission, I was a design review environmental engineer with the Arizona Department of Environmental Quality ("ADEQ") for twenty years. My responsibilities with ADEQ included review of projects for the construction of water and wastewater facilities. Prior to that, I worked as a civil engineer in several engineering and consulting firms, including Bechtel, Inc. and Brown & Root, Inc., in Houston, Texas.

PURPOSE OF TESTIMONY

Q. Were you assigned to provide the Utilities Division Staff's ("Staff") engineering analysis and recommendations for this Arizona Water Company ("AWC" or "Company") rate case proceeding?

A. Yes. I reviewed the Company's application and responses to data requests, and I visited AWC water systems. This testimony and its attachment present Staff's engineering evaluation.

ENGINEERING REPORT

Q. Please describe the attached Engineering Report, Exhibit KS.

A. Exhibit KS presents AWC water systems' details and Staff's analysis and findings, and is attached to this direct testimony. Exhibit KS contains the following major topics: (1) a description and analysis of each water system, (2) water use, (3) growth, (4) compliance with the rules of the ADEQ and Arizona Department of Water Resources, (5) depreciation rates and (6) Staff's conclusions and recommendations.

Q. Please summarize Staff's engineering conclusions and recommendations.

A. Such a summary is provided at the front of Exhibit KS.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Exhibit KS

Engineering Report For
Arizona Water Company (Northern Group)
Docket No. W-01445A-12-0348 (RATES)
By: Katrin Stukov
Utilities Engineer
January 4, 2013

SUMMARY

CONCLUSIONS

1. The Arizona Department of Environmental Quality ("ADEQ") has reported that all Arizona Water Company ("AWC" or "Company") Northern Group community water systems have no deficiencies and these systems are currently delivering water that meets water quality standards required by Arizona Administrative Code, Title 18, and Chapter 4.

2. The Arizona Department of Water Resources ("ADWR") has determined that all AWC Northern Group community water systems are in compliance with ADWR requirements governing community water systems.

3. The Forest Towne water system is not a community system and is not subject to ADEQ or ADWR Compliance monitoring.

4. Five Company systems have a water loss above the recommended threshold amount of 10 percent. By system, the water loss is as follows: Pinetop Lakes, 17.5 percent; Overgaard, 13.4 percent; Pinewood, 26 percent; Rimrock, 19.7 percent and Sedona, 10.2 percent.

5. Based on the Company's water use data sheets for the test year, all AWC Northern Group water systems have adequate production and storage capacities to serve their respective present customer base and a reasonable level of growth.

6. The Company has approved curtailment plan, backflow prevention and Best Management Practices ("BMPs") tariffs on file with the Arizona Corporation Commission.

RECOMMENDATIONS

1. Staff recommends that the Company's reported annual water testing expense of $44,892 (which excludes the MAP expense of $15,986) be accepted for this proceeding.

2. Staff recommends the continued use of the previously approved depreciation rates developed by the Company, as presented in Table A.

3. Staff recommends the acceptance of the Company's requested service line and meter installation charges, as delineated in Table B.

4. Staff recommends that in case any of the Company's water systems should be consolidated for purpose of rate making and accounting, AWC be required to continue reporting the information, including, but not limited to Water Use and Plant Description Data, separately for each of its individual systems by Public Water System ("PWS"), as defined by ADEQ, in future Annual Reports and rate filings.

5. Staff recommends adoption of the Off-site Facilities Fee Tariff discussed in Section VIII and shown in Attachment A. Staff recommends that the Company submit a calendar year Off-Site Facilities Fee status report each January to Docket Control for the prior calendar year, beginning January 2014, until the hook-up fee tariff is no longer in effect. This status report shall contain a list of all customers that have paid the hook-up fee tariff, the amount each has paid, the amount of money spent from the tariff account, the amount of interest earned on the tariff account, and a list of all facilities (by ADEQ PWS location) that have been installed with the tariff funds during the 12 month period.

6. Staff recommends that the Company continue to record and monitor monthly water losses, repair any leak as soon as it is discovered and implement an aging infrastructure replacement plan as discussed in Section VII in this report.

TABLE OF CONTENTS

I. GENERAL INTRODUCTION AND LOCATION OF COMPANY

On August 1, 2012, Arizona Water Company ("AWC" or "Company") filed an application with the Arizona Corporation Commission ("ACC" or "Commission") for a rate increase for its Northern Group.

The AWC's Northern Group supplies water to approximately 19,700 connections in Yavapai, Coconino and Navajo counties. The Northern Group is comprised of the following eight stand-alone Public Water Systems ("PWS"): Lakeside, Pinetop Lakes, Overgaard, Forest Towne, Sedona, Valley Vista, Pinewood and Rimrock.

Since its last company-wide rate case, the Company has grouped its Northern Group systems into two divisions: the Navajo Division (Lakeside, Pinetop Lakes, Overgaard and Forest Towne) and the Verde Valley Division (Sedona, Valley Vista, Pinewood and Rimrock)[1].

Map 1 shows the location of the Company's Northern Group water systems within Arizona and delineates the Company's approximately 39,412 acres of existing certificated area. Each system is named after the community it serves.

Map 2 shows the location of the Company's Navajo Division within Navajo County.

Map 3 shows the location of the Company's Verde Valley Division within Yavapai and Coconino counties.

All water systems were visited by Katrin Stukov, Staff Utilities Engineer, accompanied by Company representatives Fred Schneider, Joseph Harris and system operation managers.

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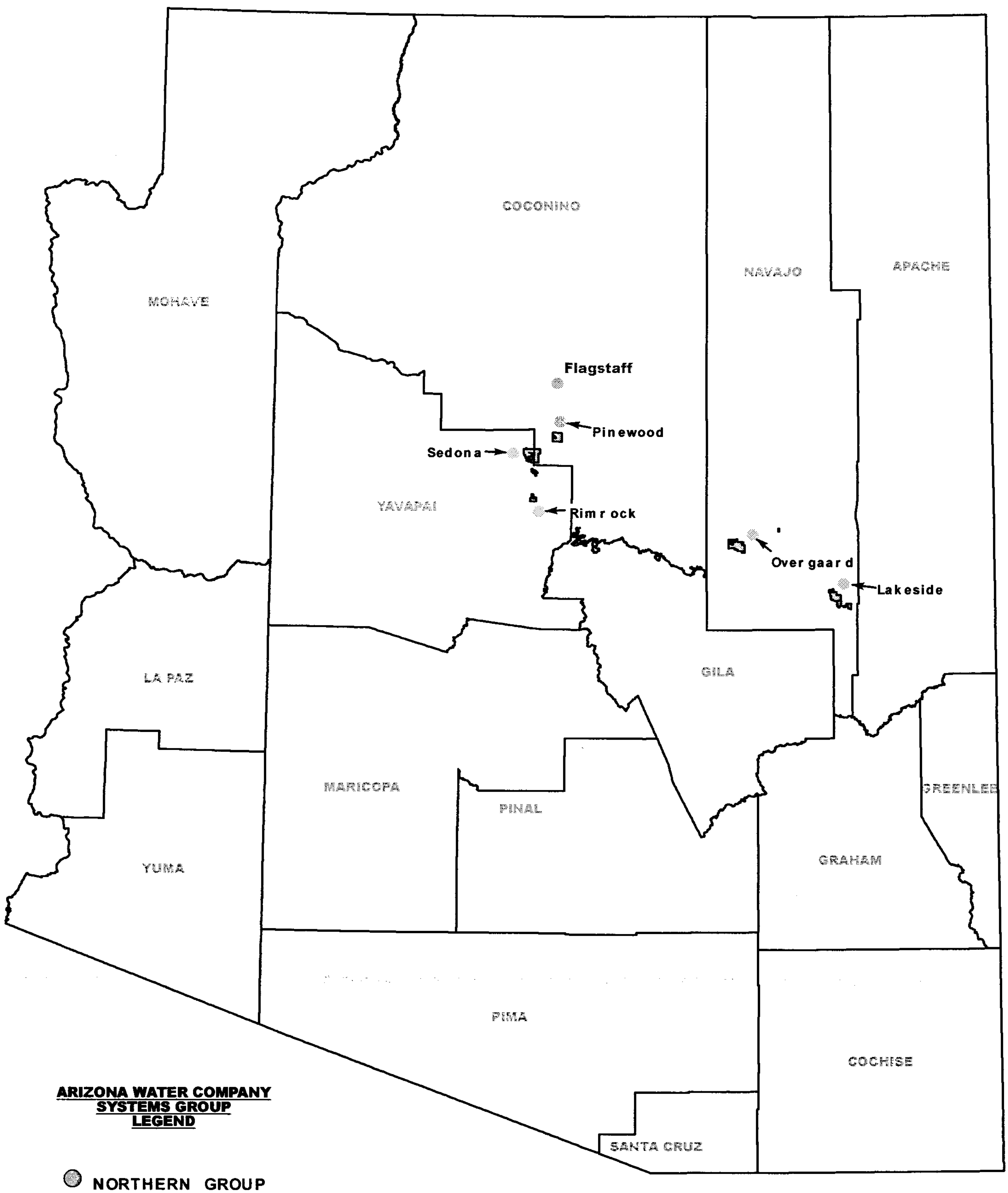
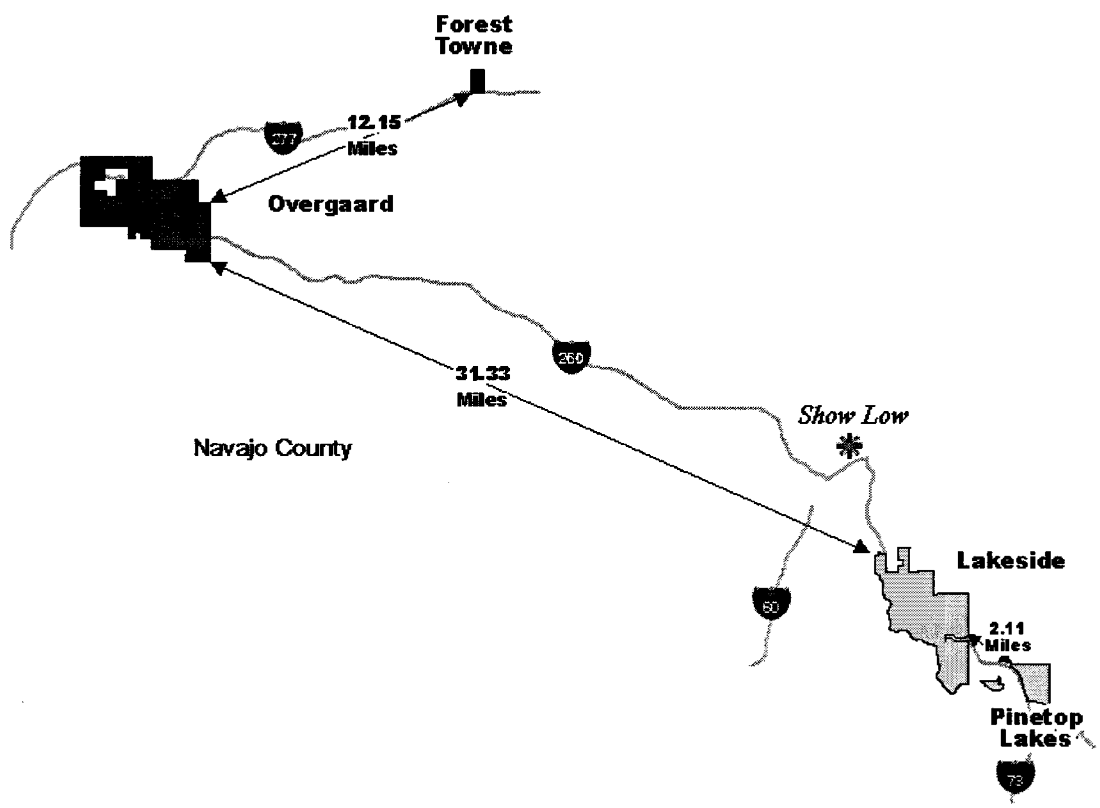
[1] For more information see Summary (page 5) of this report

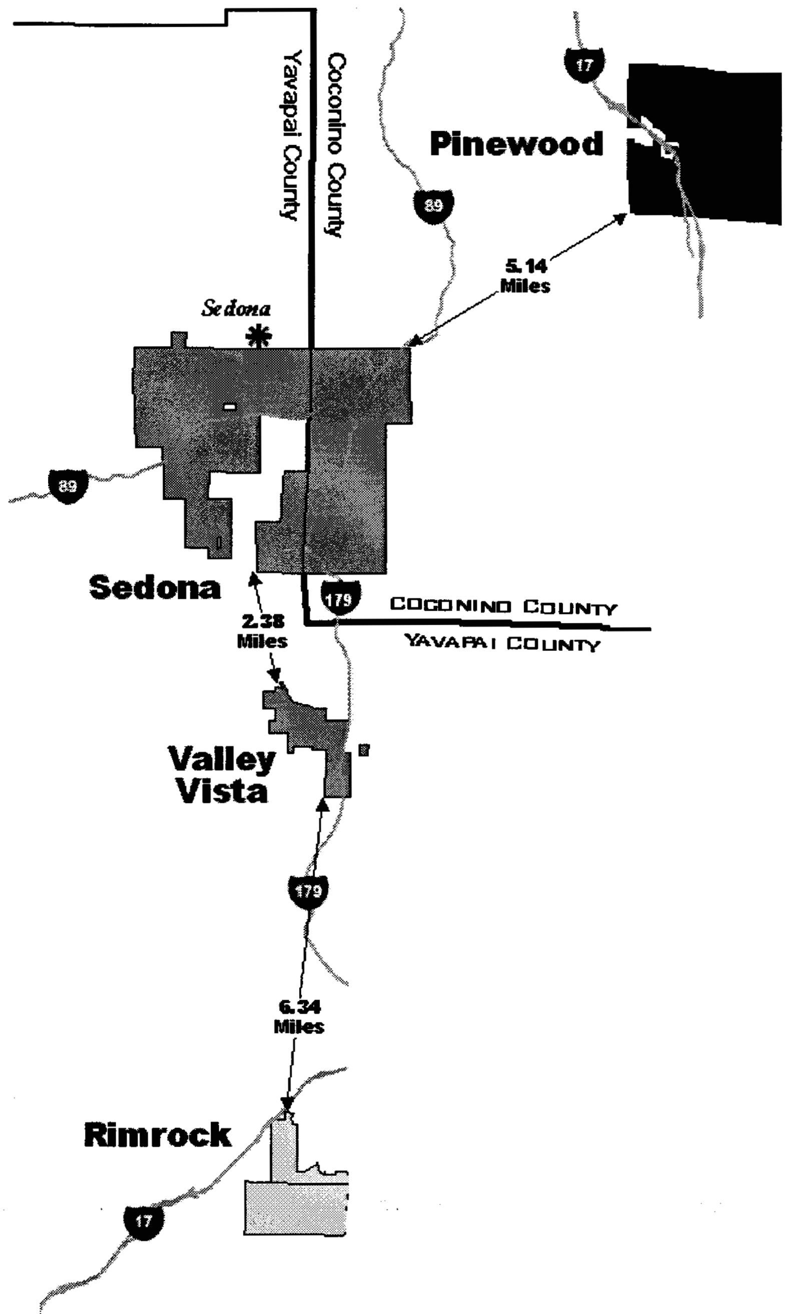
Map 1


COCONINO
MOHAVE
NAVAJO
APACHE
Flagstaff
Pinewood
Sedona
YAVAPAI
Rimrock
Overgaard
Lakeside
LA PAZ
GILA
MARICOPA
PINAL
GREENLEE
YUMA
GRAHAM
PIMA
COCHISE
SANTA CRUZ
ARIZONA WATER COMPANY
SYSTEMS GROUP
LEGEND
NORTHERN GROUP

Map 2
Navajo Division



Map 3
Verde Valley Division



II. WATER SYSTEMS

SUMMARY

The Northern Group consists of eight independent water systems[2]. These systems are not physically interconnected. Statistical information for these systems is tabulated below:

Division Name	Navajo Division[3] (fully consolidated for rate purposes)				Verde Valley Division[4] (partially consolidated for rate purposes)			
System Name	Lakeside (fully consolidated for rate purposes)		Overgaard (fully consolidated for rate purposes)		Sedona (fully consolidated for rate purposes)		Verde Valley (fully consolidated for rate purposes)	
	Lakeside	Pinetop Lakes	Overgaard	Forest Towne	Sedona	Valley Vista	Pinewood	Rimrock
PWS ID#	09-003	09-018	09-004	09-002	03-003	13-114	03-002	13-046
ADEQ compliant	yes	yes	yes	n/a	yes	yes	yes	yes
ADWR Compliant	yes	yes	yes	n/a	yes	yes	yes	yes
Number of Connections	4,012	1,001	4,153	5	5,728	766	2,856	1,217
Adequate production	yes	yes	yes	yes	yes	yes	yes	yes
Adequate storage	yes	yes	yes	yes	yes	yes	yes	yes
Number of Arsenic Treatment Plants	none	none	none	none	4	4	none	5
MAP fee	no	yes	no	no	no	yes	yes	yes
Water Loss	6.9 %	17.5%	13.4 %	7.5%	10.2 %	6.2 %	26%	19.7%
Proposed Off-site Facilities Fees	no	no	no	no	yes	yes	no	no
Date of site visit	10/29/12	10/29/12	10/30/12	10/30/12	10/23 & 10/24/12	10/23/12	10/22/12	10/22/12

[2] Each having its own water production, storage and distribution facilities
[3] For location information see Map 2
[4] For location information see Map 3

1. Lakeside PWS # 09-003

A. LOCATION AND DESCRIPTION OF THE SYSTEM

The Lakeside system is located in the Pinetop-Lakeside area approximately 8 miles south of Show Low in Navajo County. Major plant in service includes 5 active wells, 7 storage tanks, pumping facilities and a distribution system serving over 4,000 connections. A breakdown of the plant facilities is tabulated below[5]:

Wells								
AWC Well ID	ADWR Well ID	Pump (HP)	Pump Yield (GPM)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled	Water Treatment System
Sandy 40 Well # 2	55-616612	15	65	301	12	2	1970	Chlorination System
Nate Well #7	55-579779	200	530	1,020	18	6	2000	Chlorination System
Moonridge Well # 5	55-504286	150	320	1,115	20	4	1983	Chlorination System
Lower Woodland Well # 6	55-560979	175	510	1,000	18	8	1997	Chlorination System
Larson Well # 4	55-616614	50	165	760	8	3	1982	Chlorination System
			Total 1,590					

Storage Tanks		Pressure Tanks		Booster Pumps	
Capacity (gallons)	Quantity	Capacity (gallons)	Quantity	Capacity (HP)	Quantity
25,000	1	2,000	1	5	3
40,000	1	5,000	1	10	4
100,000	1			15	1
350,000	2			20	1
500,000	2				
Total 1,865,000					

[5] Per Company's application, responses and Staff's site visits (this footnote applies to all remaining water systems in this report)

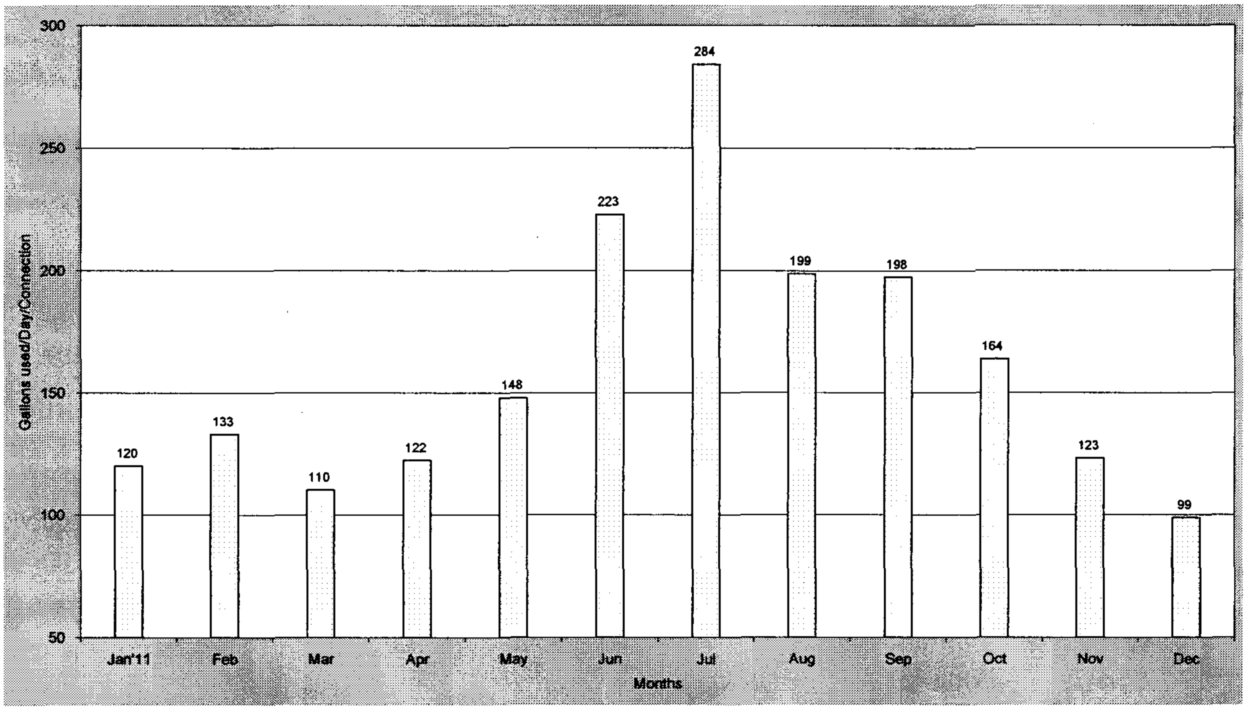
Mains		Customer Meters		Fire Hydrants
Size (inches)	Length (feet)	Size (inches)	Quantity	Quantity
<=2	39,693	5/8x3/4	3,891	227
3	27,943	1	85	
4	81,680	2	2	
6	239,068	3	1	
8	77,635	Comp.2	18	
10	350	Comp.3	2	
12	6,962	Comp.4	2	
16	80			
20	80	Total	4,001	

B. WATER USE

Water Sold

The Figure below represents the water consumption data for the test year ending December 31, 2011, provided by the Company in its water use data sheet[6]. Customer consumption included a high monthly water use of 284 gallons per day ("GPD") per connection in July, and the low water use was 99 GPD per connection in December. The average annual use was 160 GPD per connection.

[6] Per Company's application (this footnote applies to all remaining water systems in this report).



<u>Non-account Water</u>

Non-account water should be 10 percent or less. It is important to be able to reconcile the difference between water sold and the water produced by the source. A water balance will allow a company to identify water and revenue losses due to leakage, theft and flushing.

The Company reported 252,284,000 gallons pumped, 233,807,700 gallons sold and 1,089,800 gallons of authorized non-revenue uses[7] for the test year, resulting in a water loss of 6.9 percent. This percentage is within the acceptable limit of 10 percent.

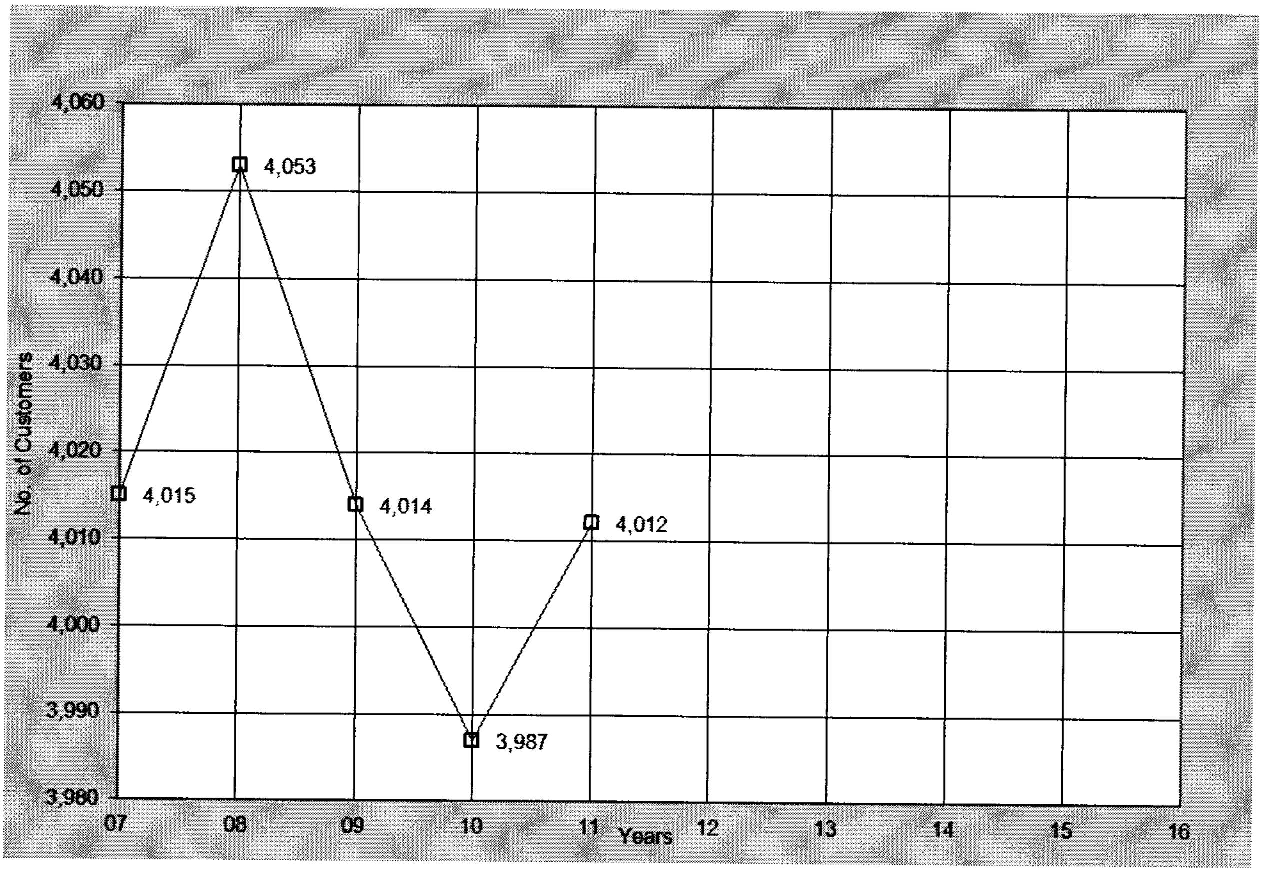
C. SYSTEM ANALYSIS

Based on the data provided by the Company for the Test Year, Staff concludes that the Lakeside system's source capacity of 1,550 gallons per minute ("GPM") and storage capacity of 1,852,000 gallons is adequate to serve the present customer base and reasonable growth.

[7]The Company's non-revenue water use includes flushing of water lines, hydrants; tank draining & cleaning, overflow; fire department use (this footnote applies to all remaining water systems in this report).

D. GROWTH

Based on customer data provided by the Company[8] it appears that the Lakeside system may be losing customers (could be due to the down economy). The Figure below depicts the number of connections at the end of each year from 2007 to 2011.



[8] Response number KS 1-45 (this footnote applies to all remaining water systems in this report).

2. Pinetop Lakes PWS # 09-018

A. LOCATION AND DESCRIPTION OF THE SYSTEM

The Pinetop Lakes system is located in Pinetop-Lakeside in Navajo County. The Company's Pinetop Lakes and Lakeside distribution systems are approximately 3 miles apart (straight-line distance) and there are Certificate of Convenience and Necessity ("CC&N") voids between the two systems. At this time these systems are not physically interconnected.

The Pinetop Lakes system's major plant in service includes 2 wells, 2 storage tanks, pumping facilities and a distribution system serving over 1,000 connections. A breakdown of the plant facilities is tabulated below:

Wells								
AWC Well ID	ADWR Well ID	Pump (HP)	Pump Yield (GPM)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled	Water Treatment System
Well #1[9]	55-616643	25	170	210	8	3	1970	Chlorination System
Well #2	55-506761	150	430	1,230	20	4	1984	Chlorination System
			Total 600					

Storage Tanks		Pressure Tanks		Booster Pumps	
Capacity (gallons)	Quantity	Capacity (gallons)	Quantity	Capacity (HP)	Quantity
310,000	1	5,000	1	10	2
1,000,000	1	7,500	1	15	1
				20	1
				25	2
Total 1,310,000				75	1

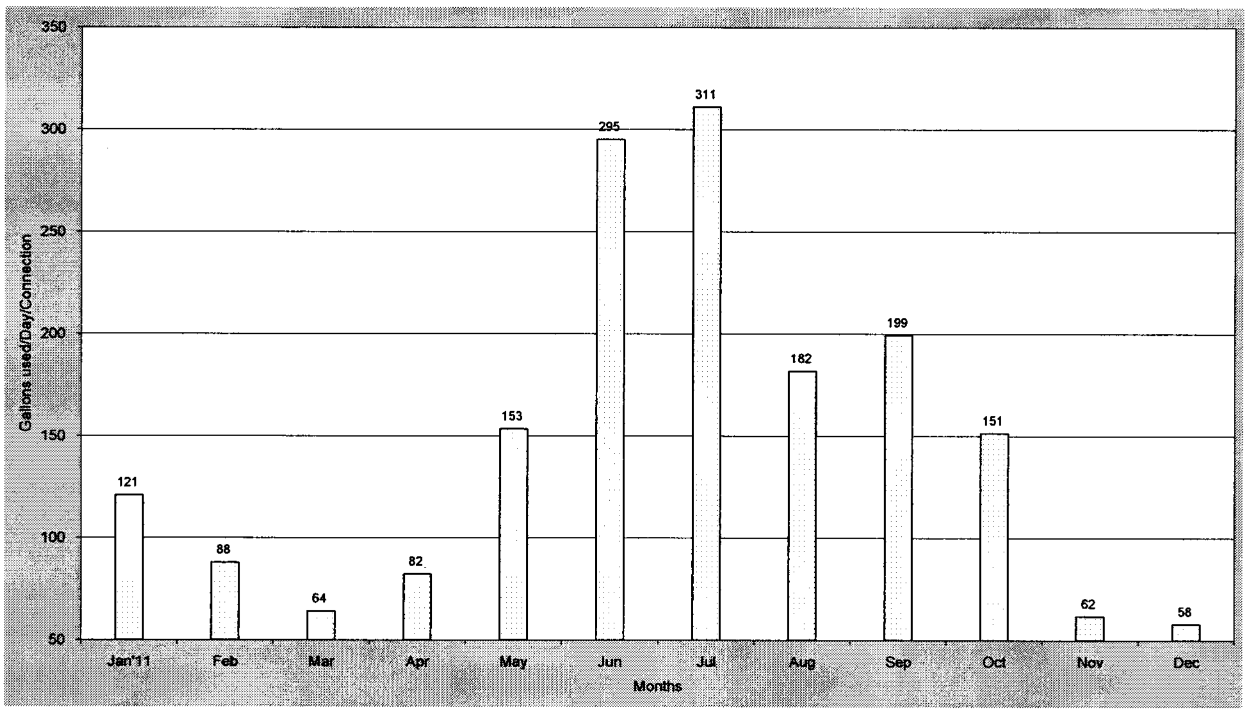
Mains		Customer Meters		Fire Hydrants
Size (inches)	Length (feet)	Size (inches)	Quantity	Quantity
<=2	380	5/8x3/4	965	141
4	30,844	1	5	
6	36,692	Comp.2	27	
8	5,921	Comp.3	1	
12	10,827	Comp.4	1	
		Total	999	

[9] At the time of the Staff site visit, Well#1 was temporary out of service due to a sanitary seal replacement, which was completed in November (per the Company's e-mail of November 27, 2012)

B. WATER USE

Water Sold

The Figure below represents the water consumption data for the test year, provided by the Company in its water use data sheet. Customer consumption included a high monthly water use of 311 GPD per connection in July, and the low water use was 58 GPD per connection in December. The average annual use was 147 GPD per connection.



Non-account Water

The Company reported 65,691,000 gallons pumped, 53,986,000 gallons sold and 218,200 gallons of authorized non-revenue uses for the test year, resulting in a water loss of 17.5 percent, which exceeds the recommended threshold amount of 10 percent.

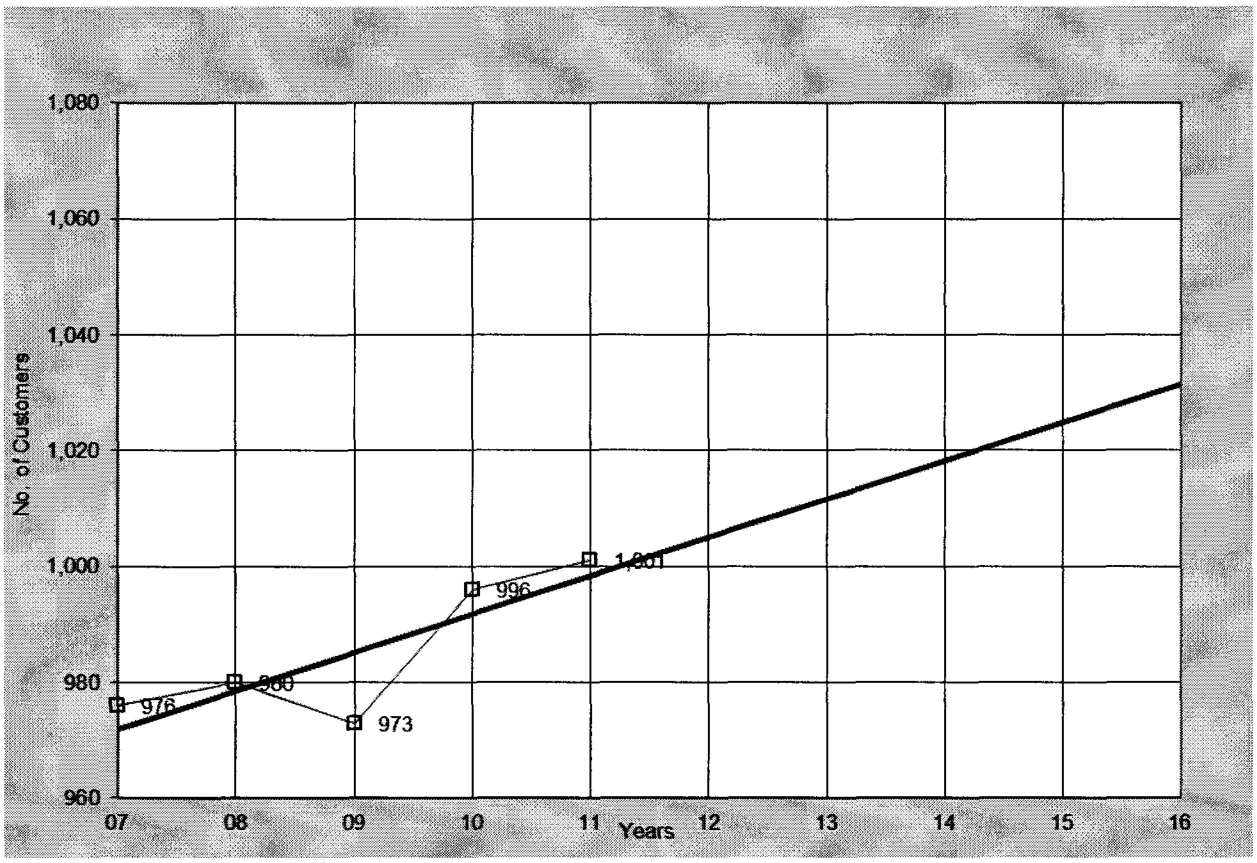
Staff recommends that the Company continue to record and monitor monthly water losses, repair any leak as soon as it is discovered and implement an aging infrastructure replacement plan as discussed in Section VII in this report.

C. SYSTEM ANALYSIS

Based on the data provided by the Company for the Test Year, Staff concludes that the Pinetop Lakes system's source capacity of 600 GPM and storage capacity of 1,310,000 gallons is adequate to serve the present customer base and reasonable growth.

D. GROWTH

Based on customer data provided by the Company, it is projected that the Pinetop Lakes system could have approximately 1,030 connections by 2016. Figure below depicts actual growth from 2007 to 2011 and projects an estimated growth in the service area for the next five years using linear regression analysis.



3. Overgaard PWS # 09-004

A. LOCATION AND DESCRIPTION OF THE SYSTEM

This system serves the Overgaard area, which is approximately 30 miles west of Show Low in Navajo County. Major plant in service includes 5 wells, 6 storage tanks, pumping facilities and a distribution system serving approximately 4,150 connections.

According to the Company, arsenic level in water produced by Well Nos. 3 & 5 is approaching the Environmental Protection Agency's ("EPA") arsenic standard of 10 parts per billion ("ppb"). Consequently, AWC is planning to construct Arsenic Treatment Facilities for its Well Nos. 3 & 5[10].

A breakdown of the plant facilities is tabulated below:

Wells								
AWC Well ID	ADWR Well ID	Pump (HP)	Pump Yield (GPM)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled	Water Treatment System
Well No. 1 Townsite	55-616639	25	80	650	6	2	1960	Chlorination System
Well No. 2 Pine Meadows	55-616640	125	340	600	16	4	1966	Chlorination System
Well # 4 Holiday Forest	55-616642	60	225	609	10	4	1971	Chlorination System
Well No. 3 Zane Grey	55-616641	30	110	700	12	3	1960	Chlorination System (Future Arsenic Treatment Plant site)
Well No. 5 Mogolon	55-579785	125	475	810	16	4	2000	Chlorination System (Future Arsenic Treatment Plant)
		Total 1,230						

[10] In order to construct Arsenic Treatment Plant for Well No.5, AWC purchased adjacent property, performed survey and constructed a fence at total cost of $39,609 (based on the Company's response JMM 6-1).

Storage Tanks		Pressure Tanks		Booster Pumps	
Capacity (gallons)	Quantity	Capacity (gallons)	Quantity	Capacity (HP)	Quantity
25,000	1	120	2	3	1
100,000	2	115[11]	2	5	1
250,000	1			10	2
315,000	1				
1,000,000	1				
Total 1,790,000					

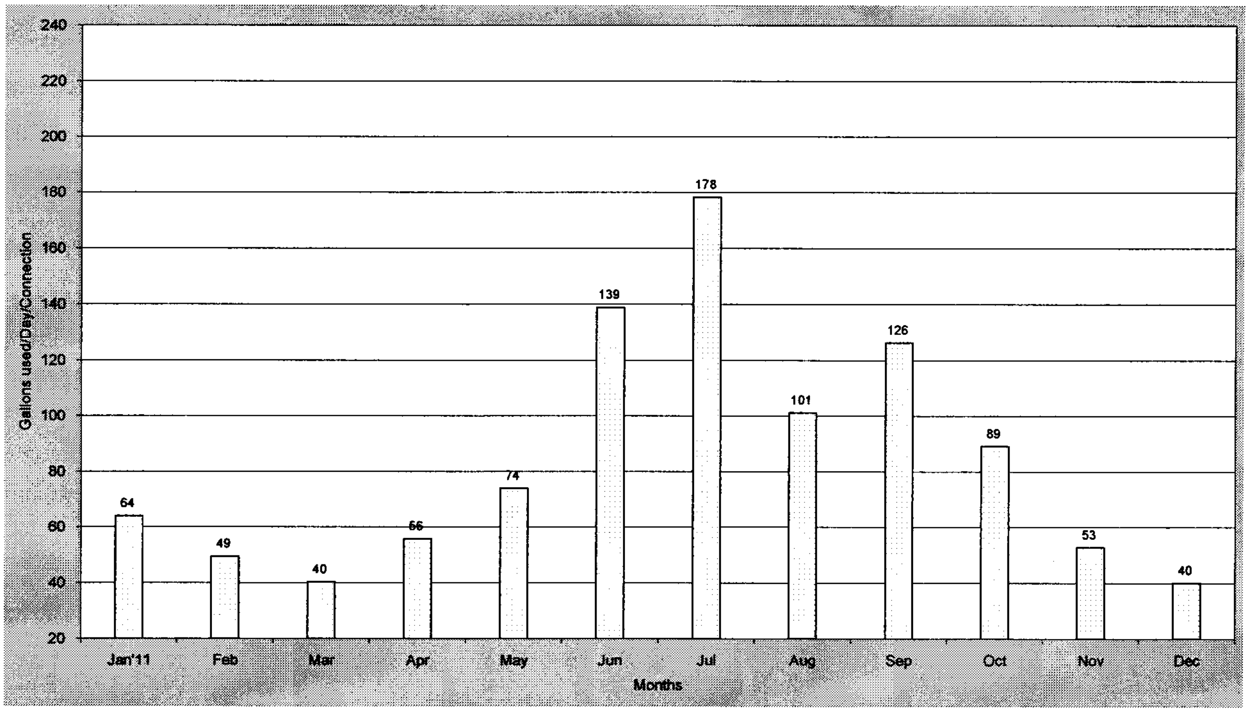
Mains		Customer Meters		Fire Hydrants
Size (inches)	Length (feet)	Size (inches)	Quantity	Quantity
<=2	10,135	5/8x3/4	4,108	354
4	119,016	1	14	
6	258,230	Comp.2	18	
8	120,040	Turbo.6	1	
16	260			
		Total	4,141	

B. WATER USE

Water Sold

The Figure below represents the water consumption data for the test year, provided by the Company in its water use data sheet. Customer consumption included a high monthly water use of 178 GPD per connection in July, and the low water use was 40 GPD per connection in December. The average annual use was 84 GPD per connection.

[11] The Company replaced two 250 gallons pressure tanks with two 115 gallons pressure tanks in October 2012.



Non-account Water

The Company reported 148,147,000 gallons pumped, 127,618,000 gallons sold and 626,000 gallons of authorized non-revenue uses for the test year, resulting in a water loss of 13.4 percent, which exceeds the recommended threshold amount of 10 percent.

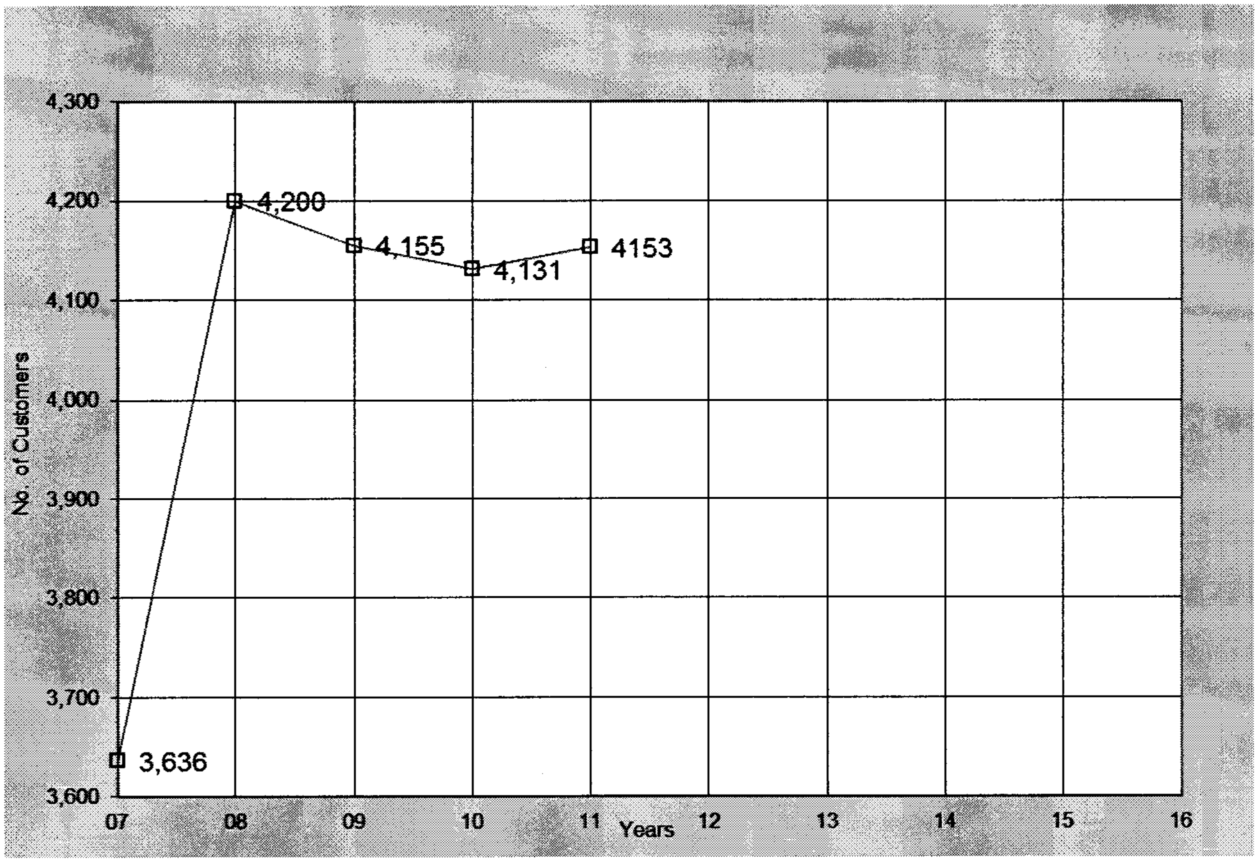
Staff recommends that the Company continue to record and monitor monthly water losses, repair any leak as soon as it is discovered and implement an aging infrastructure replacement plan as discussed in Section VII in this report.

C. SYSTEM ANALYSIS

Based on the data provided by the Company for the Test Year, Staff concludes that the Overgaard system's source capacity of 1,230 GPM and storage capacity of 1,790,000 gallons is adequate to serve the present customer base and reasonable growth.

D. GROWTH

Based on customer data provided by the Company, it appears that the Overgaard system may be losing customers (could be due to the down economy). The Figure below depicts the number of connections at the end of each year from 2007 to 2011.


4,300
4,200
4,100
4,000
3,900
3,800
3,700
3,600
No. of Customers
4,200
4,155
4,131
4153
3,636
07
08
09
10
11
Years
12
13
14
15
16

4. **Forest Towne PWS # 09-002**

D. LOCATION AND DESCRIPTION OF THE SYSTEM

The Forest Towne water system serves the Forest Towne area, approximately 15 miles west of Snowflake in Navajo County. The Company's Forest Towne and Overgaard distribution systems are approximately 12 miles apart (straight-line distance) and are not physically interconnected.

Major plant in service includes one well, one storage tank, pumping facilities and a distribution system serving five connections.

A breakdown of the plant facilities is tabulated below:

Well								
AWC Well ID	ADWR Well ID	Pump (HP)	Pump Yield (GPM)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled	Water Treatment System
Well # 1 Forest Towne	55-616610	1.5	7	460	10	5/8	unknown	Chlorination System

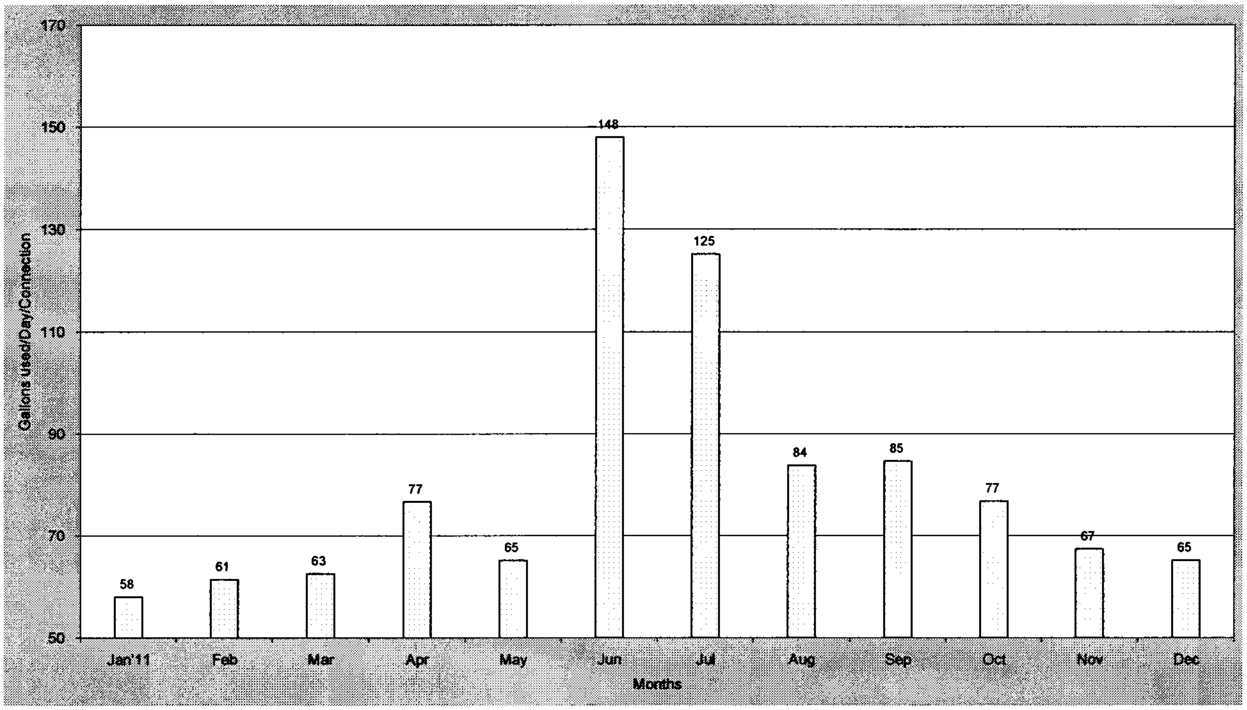
Storage Tank		Pressure Tank		Booster Pumps	
Capacity (gallons)	Quantity	Capacity (gallons)	Quantity	Capacity (HP)	Quantity
2,500	1	119	2	5	1

Mains		Customer Meters		Fire Hydrants
Size (inches)	Length (feet)	Size (inches)	Quantity	Quantity
4	1,858	5/8x3/4	5	-
6	2,302			

B. WATER USE

Water Sold

The Figure below represents the water consumption data for the test year, provided by the Company in its water use data sheet. Customer consumption included a high monthly water use of 148 GPD per connection in June, and the low water use was 58 GPD per connection in January. The average annual use was 81 GPD per connection.



Non-account Water

The Company reported 238,000 gallons pumped, 150,100 gallons sold and 70,100 gallons of authorized non-revenue uses for the test year, resulting in a water loss of 7.5 percent. This percentage is within the acceptable limit of 10 percent.

C. SYSTEM ANALYSIS

Based on the data provided by the Company for the Test Year, Staff concludes that the Forest Towne system's source capacity of 7 GPM and storage capacity of 2,500 gallons is adequate to serve the present customer base and reasonable growth.

D. GROWTH

Growth projections for the Forest Towne system cannot be estimated due to the limited data. A listing of the number of connections at the end of each year from 2007 to 2011 is tabulated below:

2007	2008	2009	2010	2011
6	6	6	6	5

5. Sedona PWS# 03-003

A. LOCATION AND DESCRIPTION OF THE SYSTEM

This system serves the Sedona area in Yavapai and Coconino Counties. Major plant in service includes 9 active wells, 4 arsenic treatment plants, 7 storage tanks, pumping facilities and a distribution system serving approximately 5,730 connections. A breakdown of the plant facilities is tabulated below:

Wells								
AWC Well ID	ADWR Well ID	Pump (HP)	Pump Yield (GPM)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled	Water Treatment Systems
#10	55-566709	100	350	1010	16	4	1998	Arsenic Treatment (Broken Arrow) Chlorination System
#7	55-616661	125	480	700	10	4	-	Arsenic Treatment (Williams) Chlorination System
#6	55-616662	60	225	-	8	3	1949	Arsenic Treatment (Rainbow) Chlorination System
#2	55-616656	100	510	320	6	4	1960	Chlorination System
#4	55-616658	25	50	750	8	2	1955	Chlorination System
#8	55-616663	250	800	791	16	6	1975	Chlorination System
#9	55-506794	150	530	505	16	6	1983	Filtration System[12] Chlorination System
#5	55-616659	60	155	684	6	4	1962	Arsenic Treatment (Harmony Hills) Chlorination System
#12	55-204279	250	900	897	16	6	2004	
		Total	4,000					

[12] Four rapid sand filters and two backwash tanks

Sedona Arsenic Treatment Plants							
ATP Name	Well Capacity (GPM)	ATP Capacity (GPM)	Manufacturer	Was the existing ATP purchased from lessor?	Is ATP In service?	Date of Lease Termination	Date Placed In Service
Broken Arrow Well#10	350	450	Siemens	n/a	yes	n/a	5/15/2012
		500	Leased ATP	no	no	10/31/2011	11/2006
Williams Well#7	480	850	Layne	n/a	yes	n/a	4/18/2008
Rainbow Well#6	225	225	EPA/Kinetico	n/a	yes	n/a	12/29/2011[13]
Harmony Hills Wells#5&12	1,055	1,160	Severn Trent	n/a	yes	n/a	6/25/2012

Storage Tanks	
Capacity (gallons)	Quantity
6,000	1
100,000	2
102,800	1
300,000	1
700,000	1
1,000,000	2
Total 3,308,800	

Pressure Tanks	
Capacity (gallons)	Quantity
1,000	2
1,550	1
2,000	2
5,000	2

[13] Per the Company's responses, the original EPA/Kinetico arsenic treatment plant has been removed from service at the Valley Vista system/Well #13 site and was relocated and modified for use in the Sedona system/Rainbow Well#6 site

Booster Pumps	
Capacity (HP)	Quantity
5	4
7.5	3[14]
10	4
15	1[15]
20	4
25	3
50	1
75	3

Customer Meters	
Size (inches)	Quantity
5/8x34	4,949
1	625
2	3
3	1
Compound 2	134
Compound 3	4
Compound 4	7
Compound 6	2
Turbo 6	1
Turbo 8	1

Mains	
Size (inches)	Quantity
<=2	77,240
3	19,782
4	160,835
8	263,142
10	102,584
14	25,073
16	1,845

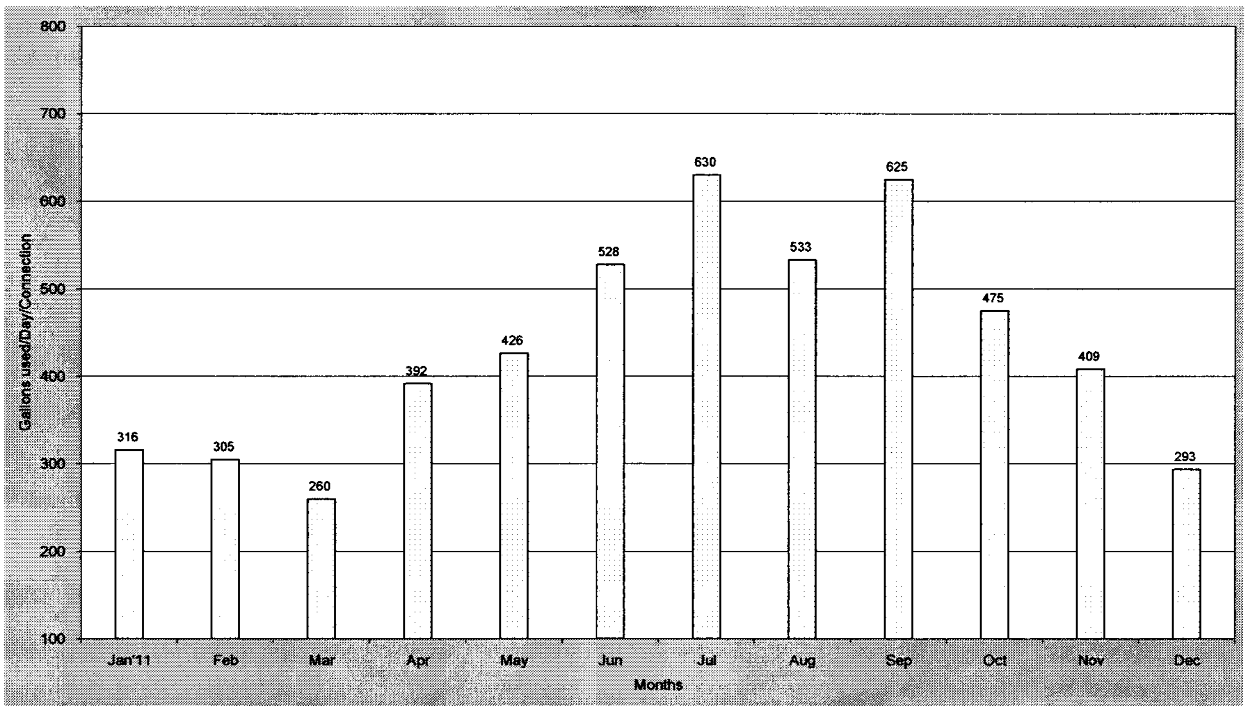
Fire Hydrants	
Quantity Standard	568

B. WATER USE

[14] The booster pump was replaced in November 2012 (Per the Company e-mails dated November 5, 2012).
[15] The booster pump was replaced in November 2012 (Per the Company e-mails dated November 19, 2012).

Water Sold

The Figure below represents the water consumption data for the test year, provided by the Company in its water use data sheet. Customer consumption included a high monthly water use of 630 GPD per connection in July, and the low water use was 260 GPD per connection in March. The average annual use was 433 GPD per connection.



Non-account Water

The Company reported 998,632,000 gallons pumped, 906,104,900 gallons sold and 1,573,700 gallons of authorized non-revenue uses for the test year, resulting in a water loss of 9.1 percent. However, based on the additional Water Use Data provided by the Company for 2012[16], Sedona water system water loss rose above the recommended threshold amount of 10 percent in 2012 (10.2 percent).

Staff recommends that the Company continue to record and monitor monthly water losses, repair any leak as soon as it is discovered and implement an aging infrastructure replacement plan as discussed in Section VII in this report.

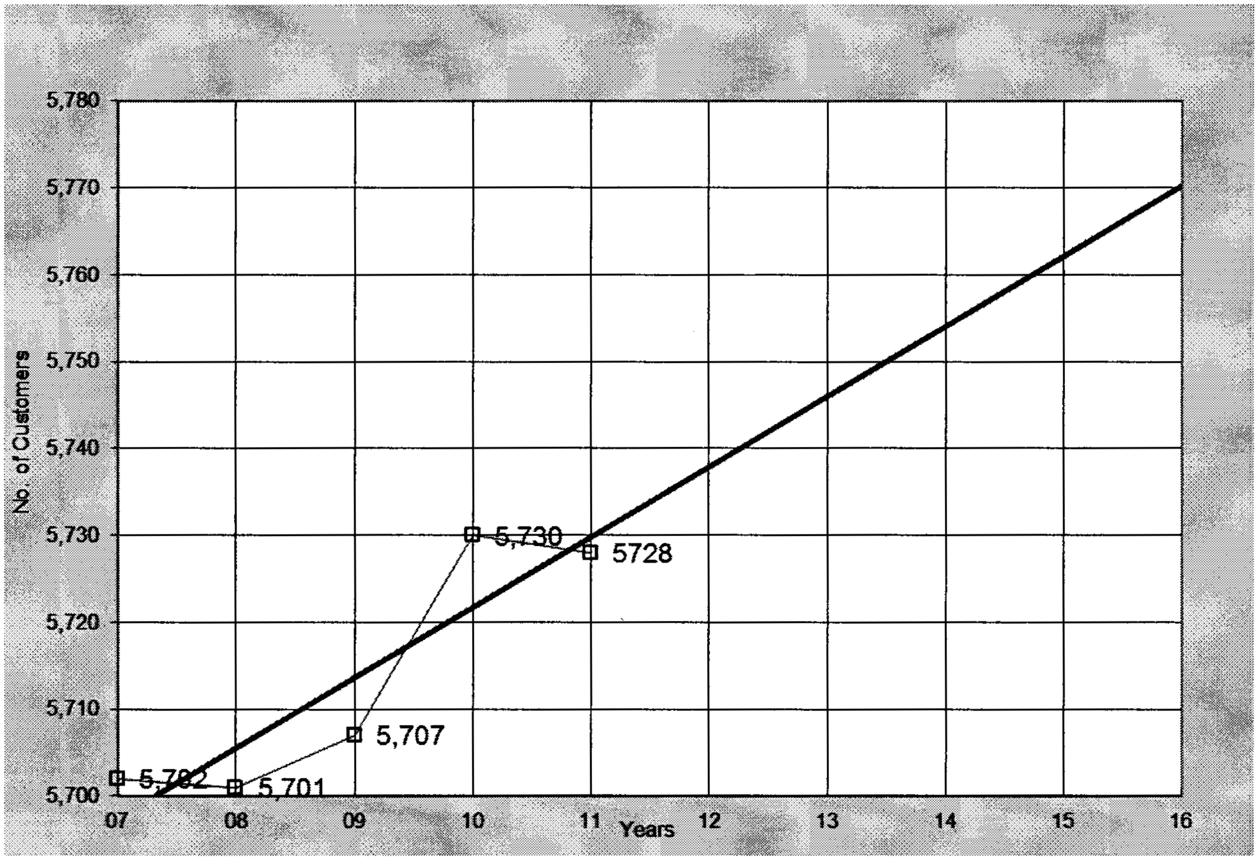
[16] Per Company e-mail of January 4, 2013

C. SYSTEM ANALYSIS

Based on the data provided by the Company for the Test Year, Staff concludes that the Sedona system's source capacity of 4,000 GPM and storage capacity of 3,308,800 gallons is adequate to serve the present customer base and reasonable growth.

D. GROWTH

Based on customer data provided by the Company, it is projected that the Sedona system could have approximately 5,770 connections by 2016. The Figure below depicts actual growth from 2007 to 2011 and projects an estimated growth in the service area for the next five years using linear regression analysis.



6. Valley Vista PWS# 13-114

A. LOCATION AND DESCRIPTION OF SYSTEM

The Valley Vista system serves the Village of Oak Creek area in Yavapai County. The Company's Valley Vista and Sedona distribution systems are approximately 2-1/2 miles apart (straight-line distance) and are not physically interconnected. Major plant in service includes 4 active wells, 4 arsenic treatment plants, 3 storage tanks, pumping facilities and a distribution system serving 735 connections. The Company estimates it will have over 900 connections at build-out[17].

A breakdown of the plant facilities is tabulated below:

Wells								
AWC Well ID	ADWR Well ID	Pump (HP)	Pump Yield (GPM)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled	Water Treatment Systems
RR	55-616671	30	155	400	8	2	1963	Arsenic Treatment Chlorination System
WHM	55-616670	5	25	15	8	1	1961	Arsenic Treatment Chlorination System
SGR	55-518969	60	255	621	8	3	1989	Arsenic Treatment Chlorination System
VV well #13	55-212110	75	420	1005	16	4	2007	Arsenic Treatment Chlorination System
		Total	855					

[17] Per the Company e-mail dated October 18, 2012

Valley Vista Arsenic Treatment Plants							
ATP Name	Well Capacity (GPM)	ATP Capacity (GPM)	Manufacturer	Was the existing ATP Purchased from lessor?	Is ATP In service?	Date of Lease Termination	Date Placed In Service
Rancho Rojo	155	155	Basin	yes	yes	6/14/2011	6/14/2006
Wild Horse Mesa	25	25	Basin	yes	yes	6/14/2011	6/14/2006
Sedona Golf Resort	255	300	Siemens	n/a	yes	n/a	5/10/2012
		300	Leased ATP	no	no	1/6/2012	2/2007
Valley Vista Well#13	420	450	Severn Trent	n/a	yes	n/a	5/28/2010
		50	EPA/Kinetico	n/a	no (See footnote #13)	n/a	6/2004

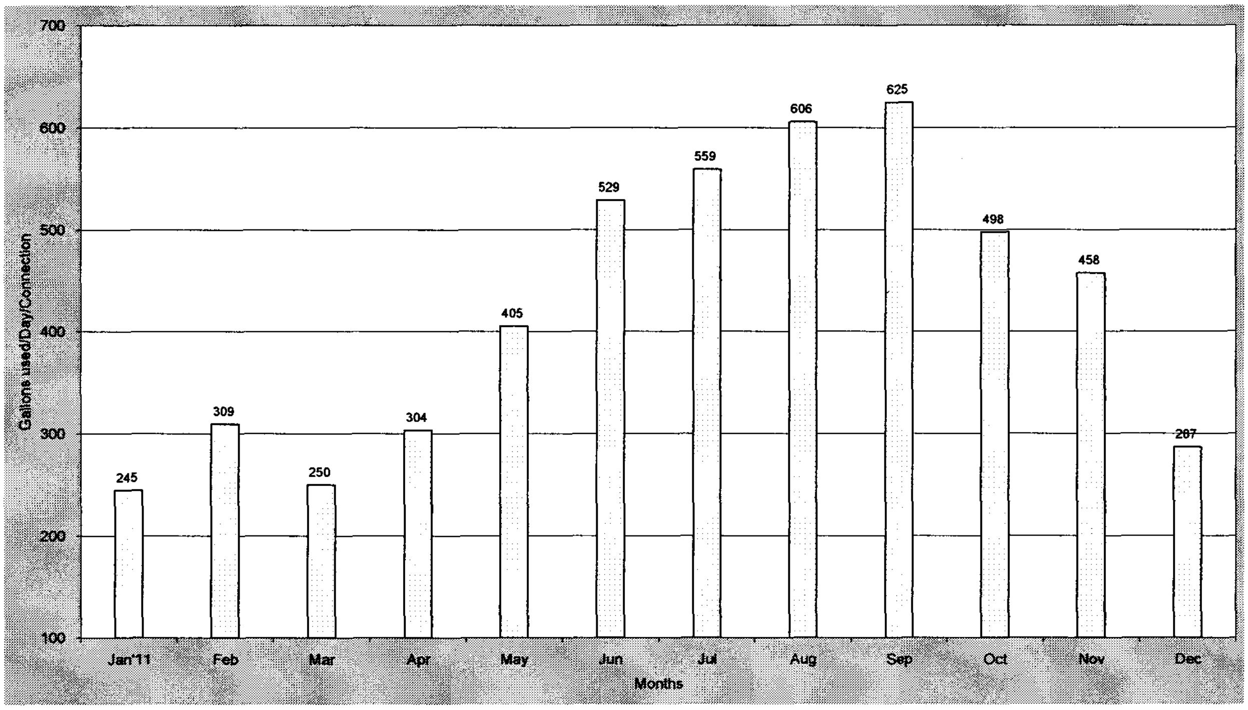
Storage Tanks		Pressure Tanks		Booster Pumps	
Capacity (gallons)	Quantity	Capacity (gallons)	Quantity	Capacity (HP)	Quantity
150,000	1	1,000	1	7.5	1
175,000	1	5,000	2	10	1
250,000	1			20	1
Total 575,000				30	1

Mains		Customer Meters		Fire Hydrants
Size (inches)	Length (feet)	Size (inches)	Quantity	Quantity
4	7,814	5/8x3/4	610	79
8	40,190	1	127	
10	36,458	2	2	
12	900	Compound 2	26	
14	1,075	Compound 3	1	
		Compound 4	2	
		Turbo.8	1	
		Total	769	

B. WATER USE

Water Sold

The Figure below represents the water consumption data for the test year, provided by the Company in its water use data sheet. Customer consumption included a high monthly water use of 625 GPD per connection in September, and the low water use was 250 GPD per connection in March. The average annual use was 423 GPD per connection.



Non-account Water

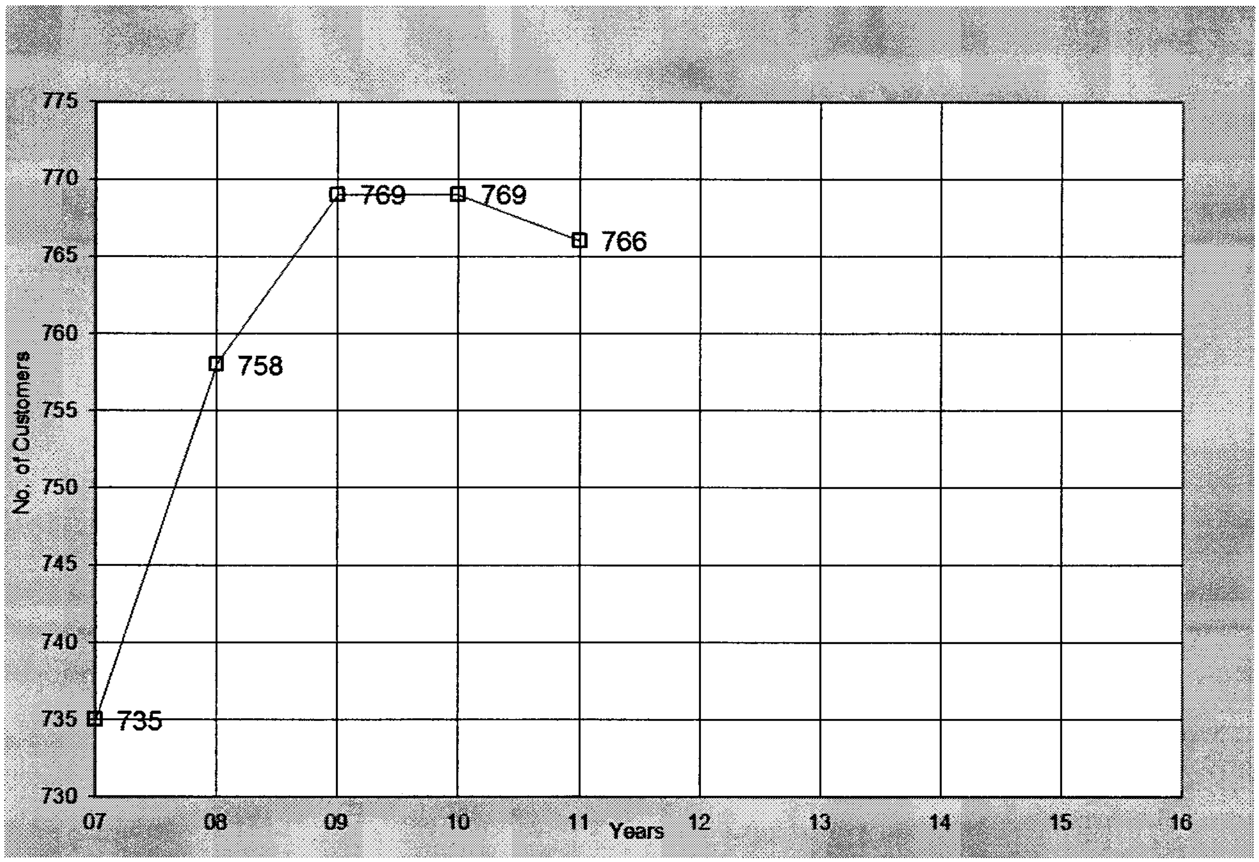
The Company reported 126,435,000 gallons pumped, 118,216,000 gallons sold and 441,300 gallons of authorized non-revenue uses for the test year, resulting in a water loss of 6.2 percent. This percentage is within the acceptable limit of 10 percent.

C. SYSTEM ANALYSIS

Based on the data provided by the Company for the Test Year, Staff concludes that the Valley Vista system's source capacity of 855 GPM and storage capacity of 575 gallons is adequate to serve the present customer base and reasonable growth.

D. GROWTH

Based on customer data provided by the Company, it appears that the Valley Vista system may be losing customers (could be due to the down economy). The Figure below depicts the number of connections at the end of each year from 2007 to 2011.



7. Pinewood PWS # 03-002

A. LOCATION AND DESCRIPTION OF THE SYSTEM

This system is located in the Munds Park area, approximately 17 miles south of Flagstaff in Coconino County. Major plant in service includes 3 active wells, 5 storage tanks, pumping facilities and a distribution system serving approximately 2,860 connections. A breakdown of the plant facilities is tabulated below:

Wells								
AWC Well ID	ADWR Well ID	Pump (HP)	Pump Yield (GPM)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled	Water Treatment System
#5	55-616647	50	153	1253	6	3	1977	Chlorination System
#10	55-616651	125	320	1304	12	4	1977	Chlorination System
#11	55-568934	125	320	1380	12	4	1999	Chlorination System
								-
			Total 793					

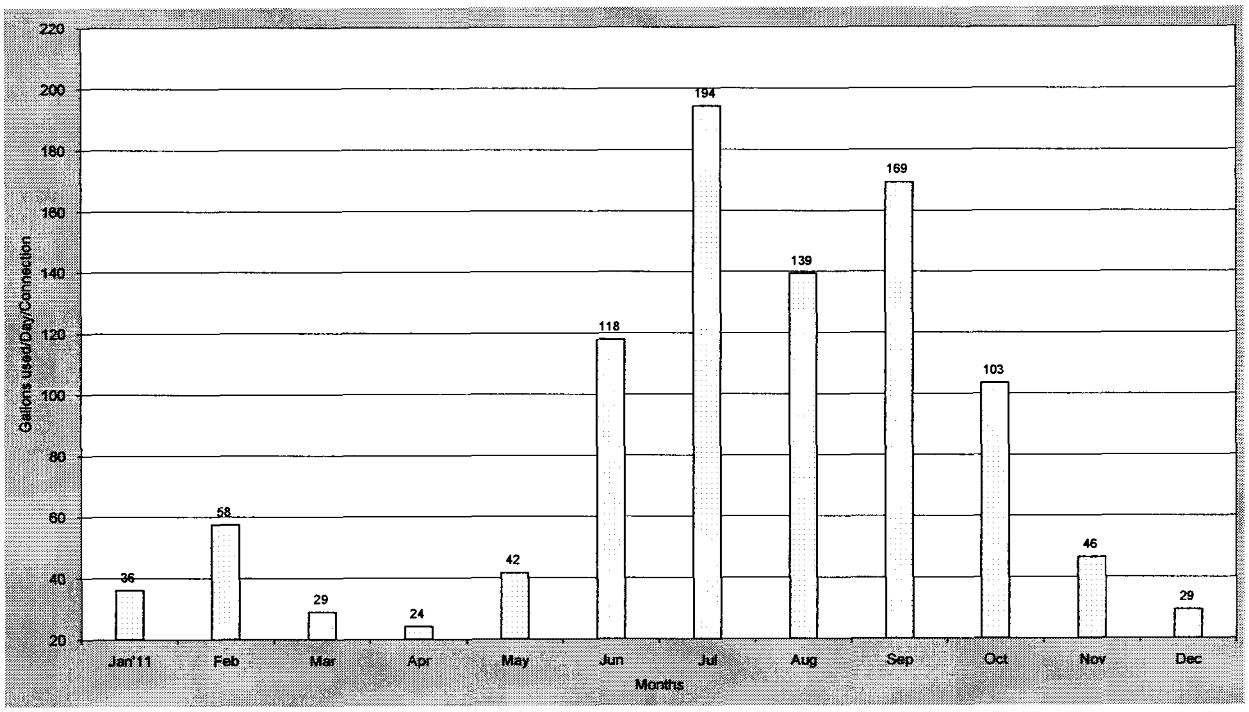
Storage Tanks		Pressure Tanks		Booster Pumps	
Capacity (gallons)	Quantity	Capacity (gallons)	Quantity	Capacity (HP)	Quantity
40,000	1	1,000	1	1.5	1
100,000	2			10	2
500,000	2			15	2
Total 1,240,000					

Mains		Customer Meters		Fire Hydrants
Size (inches)	Length (feet)	Size (inches)	Quantity	Quantity
<=2	5,555	5/8x3/4	2,831	109
3	1,153	1	8	
4	70,908	Compound 2	5	
6	90,022			
8	5,064			
10	560			
		Total	2,844	

B. WATER USE

Water Sold

The Figure below represents the water consumption data for the test year, provided by the Company in its water use data sheet. Customer consumption included a high monthly water use of 194 GPD per connection in July, and the low water use was 24 GPD per connection in April. The average annual use was 82 GPD per connection.



Non-account Water

The Company reported 118,059,000 gallons pumped, 86,259,000 gallons sold and 1,138,000 gallons of authorized non-revenue uses for the test year, resulting in a water loss of 26 percent, which exceeds the recommended threshold amount of 10 percent.

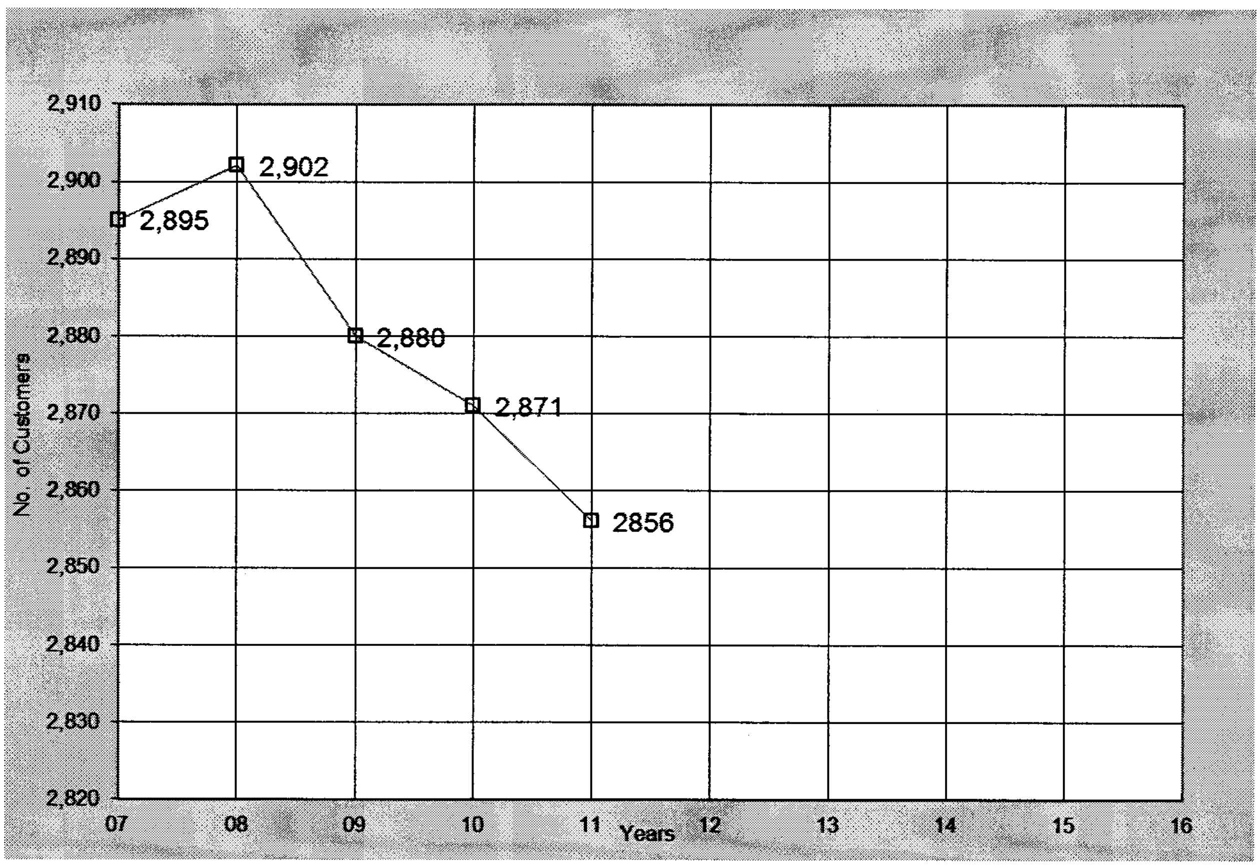
Staff recommends that the Company continue to record and monitor monthly water losses, repair any leak as soon as it is discovered and implement an aging infrastructure replacement plan as discussed in Section VII in this report.

C. SYSTEM ANALYSIS

Based on the data provided by the Company for the Test Year, Staff concludes that the Pinewood system's source capacity of 793 GPM and storage capacity of 1,240,000 gallons is adequate to serve the present customer base and reasonable growth.

D. GROWTH

Based on customer data provided by the Company, it appears that the Pinewood system may be losing customers (could be due to the down economy). The Figure below depicts the number of connections at the end of each year from 2007 to 2011.



8. Rimrock PWS # 13-046

A. LOCATION AND DESCRIPTION OF THE SYSTEM

This system is located in Rimrock, approximately 10 miles northeast of Camp Verde in Yavapai County. Major plant in service includes 6 active wells, 5 arsenic treatment plants, 3 storage tanks, pumping facilities and a distribution system serving approximately 1,220 connections.

A breakdown of the plant facilities is tabulated below:

Wells								
AWC Well ID	ADWR Well ID	Pump (HP)	Pump Yield (GPM)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled	Water Treatment Systems
#1	55-616652	15	70	116	10	3	1970	Arsenic Treatment Chlorination System
#2	55-616653	30	170	209	10	4	1968	Arsenic Treatment Chlorination System
#3	55-616654	7.5	35	380	5	2	1966	Arsenic Treatment Chlorination System
#4	55-616655	7.5	55	70	6	2	1964	Arsenic Treatment Chlorination System
MH 3	55-591459	75	340	1,020	16	4	2003	Arsenic Treatment Chlorination System
MH2	55-803288	5	25	80	6	2	1969	
			Total 695					

Storage Tanks		Pressure Tanks		Booster Pumps	
Capacity (gallons)	Quantity	Capacity (gallons)	Quantity	Capacity (HP)	Quantity
100,000	1	350	1	5	2
160,000	1	1,350	1	10	2
200,000	1	3,000	1	15	3
		5,000	1		
Total 460,000					

Rimrock Arsenic Treatment Plants							
ATP Name	Well Capacity (GPM)	ATP Capacity (GPM)	Manufacturer	Was the existing ATP Purchased from lessor?	Is ATP In service?	Date of Lease Termination	Date Placed In Service
Rimrock Well#1	70	100	Basin	yes	yes	6/14/2011	6/14/2006
Rimrock Well#3	35	45	Basin	yes	yes	6/14/2011	6/14/2006
Rimrock Well#4	55	120	Basin	yes	yes	6/14/2011	6/14/2006
Rimrock Well#2	170	200	Severn Trent	no	yes	n/a	12/30/2011
		300	Leased ATP	no	no	10/11/2011	2/2007
Montezuma Haven Wells #2&3	365	425	Severn Trent	no	yes	n/a	4/2/2012
		300	Leased ATP	no	no	1/6/2012	4/2007
		30	EPA/Adedge	n/a	no	Removed from service on 4/2/2012[18]	2/2005

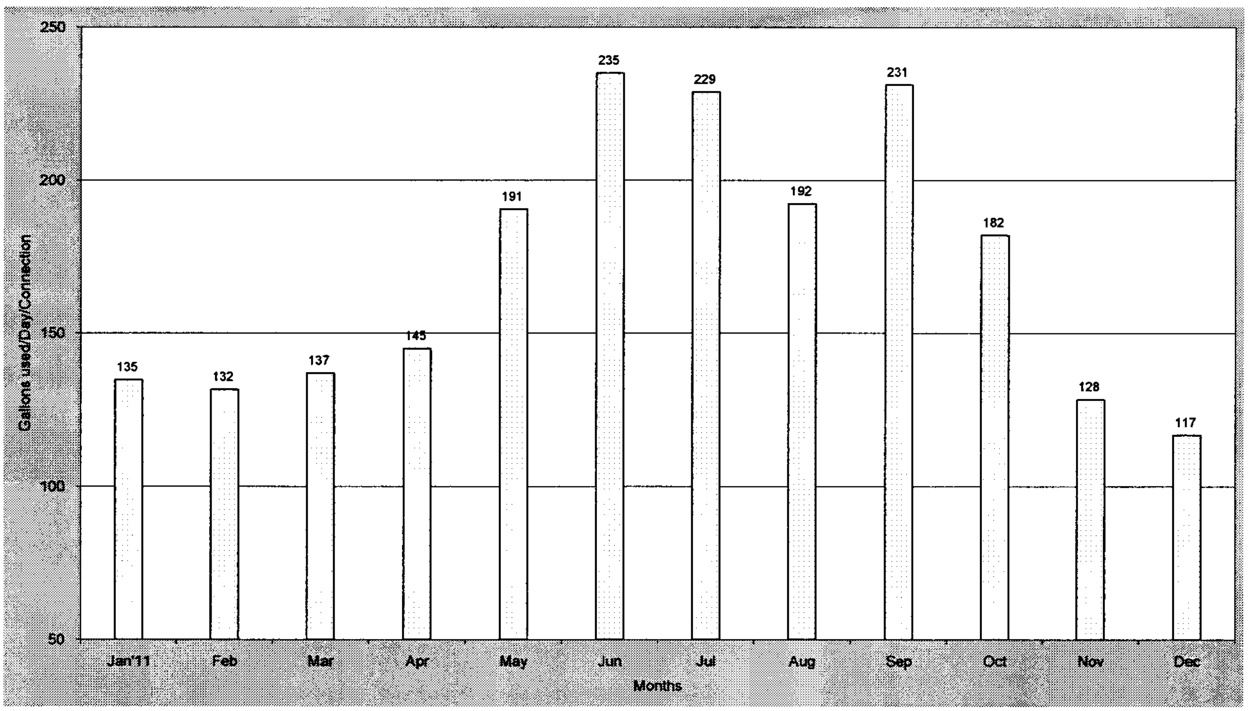
Mains		Customer Meters		Fire Hydrants
Size (inches)	Length (feet)	Size (inches)	Quantity	Quantity
2	24,763	5/8x3/4	1,202	61
3	1,350	1	9	
4	66,975	Comp.2	2	
6	55,288	Turbo 2	1	
8	11,708			
12	4,400			
		Total	1,214	

[18] Per Company response KS 14.4 (Docket 08-0440) and e-mail dated October 18, 2012

B. WATER USE

Water Sold

The Figure below represents the water consumption data for the test year, provided by the Company in its water use data sheet. Customer consumption included a high monthly water use of 235 GPD per connection in June, and the low water use was 117 GPD per connection in December. The average annual use was 171 GPD per connection.



Non-account Water

The Company reported 95,647,000 gallons pumped, 76,118,800 gallons sold and 885,000 gallons of authorized non-revenue uses for the test year, resulting in a water loss of 19.7 percent, which exceeds the recommended threshold amount of 10 percent.

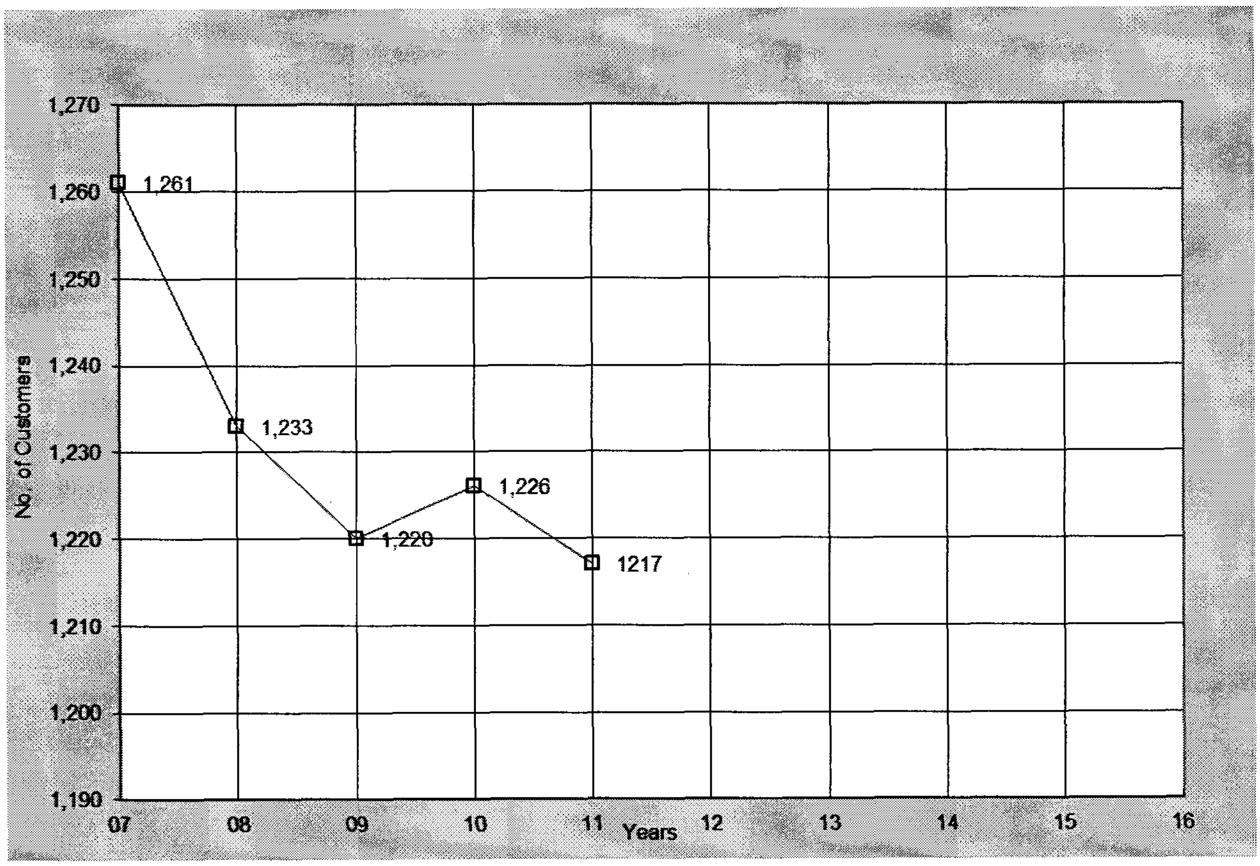
Staff recommends that the Company continue to record and monitor monthly water losses, repair any leak as soon as it is discovered and implement an aging infrastructure replacement plan as discussed in Section VII in this report.

C. SYSTEM ANALYSIS

Based on the data provided by the Company for the Test Year, Staff concludes that the Rimrock system's source capacity of 695 GPM and storage capacity of 460,000 gallons is adequate to serve the present customer base and reasonable growth.

D. GROWTH

Based on customer data provided by the Company, it appears that the Rimrock system is losing customers. The Figure below depicts the number of connections at the end of each year from 2007 to 2011.



III. ADEQ COMPLIANCE

Compliance Status

ADEQ monitors community water systems for compliance. Forest Towne water system (PWS # 09-002) has less than 15 connections and is not considered a community system at this time. Subsequently, it is not subject to ADEQ Compliance monitoring.

ADEQ has reported that all AWC Northern Group community water systems have no deficiencies and these systems are currently delivering water that meets water quality standards required by Arizona Administrative Code, Title 18, and Chapter 4.[19]

Water Testing Expense

Participation in the ADEQ Monitoring Assistance Program ("MAP") is mandatory for community water systems, which serve less than 10,000 persons (approximately 3,300 service connections). Because the Company is able to monitor its systems at a lower cost than the MAP, the Company has chosen not to participate in the MAP for its three larger systems (with more than 3,300 service connections): Lakeside, Overgaard and Sedona. All other AWC/ Northern Group community systems participate in the MAP. The Company has an approved MAP surcharge tariff that recovers MAP chargers incurred for participating systems. The Company reported 2011 MAP costs totaling $15,986 and 2011 MAP surcharge revenues totaling $16,244[20].

The Company reported its water testing expenses for the test year in the "Water Treatment" operating expenses account. The Company reported its water testing expenses for the test year at $44,892[21] (this amount does not include 2011 MAP costs).

Staff reviewed the Company's water testing expenses and recommends an annual water testing expense of $44,892 for this proceeding.

IV. ADWR COMPLIANCE

The Company's Northern Group water systems are not located in any ADWR Active Management Area ("AMA"). The ADWR has determined that all AWC Northern Group community water systems are in compliance with ADWR requirements governing community water systems[22]. Forest Towne system it is not subject to ADWR Compliance monitoring.

[19] Per ADEQ Compliance Status Reports dated April 13, 2012.
[20] Per the Company's application (Schedule C-2)
[21] Per the Company's responses to data requests KS 1-43& 1-44.
[22] Per ADWR Compliance Reports dated August 20, 2012.

V. DEPRECIATION RATES

In the prior rate case for the Western Group individual component depreciation rates developed by the Company were approved by the Commission (see Decision No. 68302). Those depreciation rates have been carried forward and proposed in this rate application. Staff recommends the continued use of the previously approved depreciation rates. These rates are presented in Table A.

TABLE A

COMPONENT DEPRECIATION RATES

Plant Account No.	Depreciable Plant	Average Service Life (years)	AWC Developed Rates (%)
314	Wells & Springs	32	3.13
321	Pumping Plant Structures & Improvements	35	2.86
325	Electric Pumping Equipment	17	5.88
328	Gas Engines	25	4.00
331	Water Treatment Structures & Improvements	40	2.50
332	Water Treatment Equipment	35	2.86
341	Transmission/Distribution Structures	30	3.33
342	Storage Tanks	50	2.00
343	Transmission/Distribution Mains	56	1.79
344	Fire Sprinkler Taps	50	2.00
345	Services	42	2.38
346	Meters	22	4.55
348	Hydrants	55	1.82
390	General Plant Structures	40	2.50
391	Office Furniture & Equipment	15	6.67
393	Warehouse Equipment	20	5.00
394	Tools, Shop & Garage Equipment	25	4.00
395	Laboratory Equipment	20	5.00
396	Power Operated Equipment	15	6.67
397	Communication Equipment	15	6.67
398	Miscellaneous Equipment	30	3.33

VI. OTHER ISSUES

Service Line and Meter Installation Charges

The Company has requested changes in its service line and meter installation charges. These charges are refundable advances. According to the Company, charges for services 3 inches and larger, and those which require boring under a road or highway, do not recover the actual cost of installation. As a result, the Company incurs additional costs which ultimately need to be recovered through general service rates from customers not connected to that particular service. The Company is requesting to charge these installation charges at actual cost. Staff recommends the acceptance of the Company's requested installation charges as shown in Table B.

TABLE B

SERVICE LINE AND METER INSTALATION CHARGES

Company's Current Charges				Company's Requested Charges		
Meter Size	Service Line Charges	Meter Charges	Total Charges	Service Line Charges**	Meter Charges	Total Charges
5/8"x 3/4"	$445	$155	$600	$445	$155	$600
1"	$495	$315	$810	$495	$315	$810
2"- Turbine 2"- Compound	$830 $830	$1,045 $1,890	$1,875 $2,720	$830 $830	$1,045 $1,890	$1,875 $2,720
3"- Turbine 3"- Compound	$1,045 $1,165	$1,670 $2,545	$2,715 $3,710	At Cost	At Cost	At Cost
4"- Turbine 4"- Compound	$1,490 $1,670	$2,670 $3,645	$4,160 $5,315	At Cost	At Cost	At Cost
6"- Turbine 6"- Compound	$2,210 $2,330	$5,025 $6,920	$7,235 $9,250	At Cost	At Cost	At Cost
8"- Turbine 8"- Compound	$2,210 $2,330	$5,025 $6,920	$7,235 $9,250	At Cost	At Cost	At Cost
10"- Turbine 10"- Compound	$2,210 $2,330	$5,025 $6,920	$7,235 $9,250	At Cost	At Cost	At Cost
				**Note: When required the actual cost incurred for boring under a road or highway will be added.		

Curtailment Plan Tariff

The Company has an approved curtailment plan tariff on file with the Commission.

Backflow Prevention Tariff

The Company has an approved backflow prevention tariff on file with the Commission.

Best Management Practices ("BMPs")

The Company has approved BMP tariffs on file with the Commission.

VII. THE WATER LOSS REPORT

As part of this application, the Company submitted an initial report ("Report"), titled "Water Loss Reduction Program for Water Systems in the Northern Group" (Exhibit FKS-19), which evaluates water loss in Pinewood, Rimrock, Overgaard, Pinetop Lakes and Sedona systems. The report identifies the most critical areas, estimates the quantity of aging water mains and service lines that need to be replaced, and estimates the associated replacement costs. Finally, the Report outlines the initial 3-year replacement plan.

A summary of the initial 3-year plan to replace aging infrastructure is tabulated below:

System	Water Loss	Water Mains Quantity (LF)		Service Lines Quantity (#)		3-Year Total Cost
		Existing	Proposed Replacement	Existing	Proposed replacement	
Pinewood	26%	167,011	1,850	2,800	171	$1,107,568
Rimrock	19.7%	165,620	7,450	1,200	180	$1,267,536
Overgaard	13.4%	511,231	2,200	4,100	343	$1,091,457
Pinetop Lakes	17.5%	84,285	none	1,000	193	$620,993
Sedona	10.2%	657,916	550	5,700	115	$730,931
					Total	$4,818,485

In addition, the Company submitted proposed replacement projects and cost breakdown for 2013[23]. A summary of replacement cost by system for 2013 is tabulated below:

System	2013 Replacement Cost
Pinewood	$288,219
Rimrock	$183,378
Overgaard	$116,861
Pinetop Lakes	$306,532
Sedona	$68,279
Total	$963,269

[23] Per the Company's responses to data requests KS-5

Staff has reviewed the Company's Report for Pinewood, Rimrock, Overgaard, Pinetop Lakes and Sedona systems and the proposed 3-year infrastructure replacement plan at cost of $4,818,485 and infrastructure replacement plan for 2013 at cost of $ 963,269 and found the proposal reasonable and appropriate. However, no "used and useful" determination of the proposed plant items was made, and no conclusions should be inferred for rate making or rate base purposes in the future.

VIII. OFF-SITE FACILITIES FEE

In its rate application, the Company has requested an Off-Site Facilities Fee ("Facilities Fee") of $1,100 for each new service connection with a 5/8 x 3/4-inch meter in its Sedona system (which includes two systems consolidated for rate purposes: Sedona PWS No. 03-003 and Valley Vista PWS No.13-114). The amount of the Facilities Fee increases for larger meter sizes (see Fee Table contained in Attachment A).

The Company intends to use this fee to assist in funding the East Sedona water supply,[24] storage[25] and associated facilities, needed to produce, store and pump water in order to meet the needs of future growth in the Sedona system's service area at an estimated cost of $5.2 million.

Staff concludes that the proposed Facilities Fee of $1,100 for a 5/8"x 3/4"meter is reasonable. Staff recommends the adoption of the specific tariff language contained in Attachment A of this report.

[24] Well with capacity of 0.75 million gallon per day
[25] 1.5 million gallons storage tank

TARIFF SCHEDULE

UTILITY: Arizona Water Company
SYSTEMS: Sedona PWS No. 03-003 &
Valley Vista PWS No.13-114
(Verde Valley Division / Sedona)

DOCKET NO. W-01445A-12-0348

DECISION NO. ____________
EFFECTIVE DATE: __________

OFF-SITE FACILITIES FEE (WATER)

I. Purpose and Applicability

The purpose of the off-site facilities fees payable to Arizona Water Company ("the Company") pursuant to this tariff is to equitably apportion the costs of constructing additional off-site facilities necessary to provide water production, treatment, delivery, storage and pressure among all new service connections. These charges are applicable to all new service connections established after the effective date of this tariff undertaken via Main Extension Agreements or requests for service not requiring a Main Extension Agreement. The charges are one-time charges and are payable as a condition to Company's establishment of service, as more particularly provided below.

II. Definitions

Unless the context otherwise requires, the definitions set forth in R-14-2-401 of the Arizona Corporation Commission's ("Commission") rules and regulations governing water utilities shall apply in interpreting this tariff schedule.

"Applicant" means any party entering into an agreement with Company for the installation of water facilities to serve new service connections, including Developers and/or Builders of new residential subdivisions and/or commercial and industrial properties.

"Company" means Arizona Water Company.

"System" means Public Water System ("PWS"), as defined by Arizona Department of Environmental Quality.

"Main Extension Agreement" means any agreement whereby an Applicant agrees to advance the costs of the installation of water facilities necessary for the Company to serve new service connections within a development, or installs such water facilities necessary to serve new service connections and transfer ownership of such water facilities to the Company, which agreement shall require the approval of the Commission pursuant to A.A.C. R-14-2-406, and shall have the same meaning as "Water Facilities Agreement" or "Line Extension Agreement."

"Off-site Facilities" means wells, storage tanks, water treatment facilities, that are not otherwise supported by an Arsenic Cost Recovery Mechanism ("ACRM"), and related appurtenances and equipment necessary for proper operation of such water treatment facilities, including engineering and design costs. Off-site facilities may also include booster pumps, pressure tanks, transmission mains and related appurtenances and equipment necessary for proper operation of such facilities if these facilities are not for the exclusive use of the applicant and will benefit the entire water system (either all of Valley Vista or all of Sedona).

"Service Connection" means and includes all service connections for single-family residential or commercial, industrial other uses, regardless of meter size.

III. Off-Site Water Facilities Fee

For each new service connection, the Company shall collect an off-site facilities fee derived from the following table:

OFF-SITE FACILITIES FEE TABLE		
Meter Size	**Size Factor**	**Total Fee**
5/8" x 3/4 "	1	$1,100
3/4"	1.5	$1,650
1"	2.5	$2,750
1-1/2 "	5	$5,500
2"	8	$8.800
3"	16	$17,000
4"	25	$27,500
6" or larger	50	$55,000

IV. Terms and Conditions

(A) Assessment of One Time Off-Site Facilities Fee: The off-site facilities fee may be assessed only once per parcel, service connection, or lot within a subdivision (similar to meter and service line installation charge). These charges are not applicable to additional service connections that are established as back-up connections, under the condition that these service connections are not to be used at the same time.

(B) Use of Off-Site Facilities Fee: Off-site facilities fees may only be used to pay for capital items of off-site facilities or for repayment of loans obtained to fund the cost of installation of off-site facilities. Off-site facilities fees shall not be used to cover repairs, maintenance, or operational costs. The Company shall record amounts collected under this tariff as Contributions in Aid of Construction ("CIAC"); however, such amounts shall not be deducted from rate base until such amounts have been expended for utility plant.

(C) Time of Payment:

1) For those requiring a Main Extension Agreement: In the event that the Applicant is required to enter into a Main Extension Agreement, whereby the Applicant agrees to advance the costs of installing mains, valves, fittings, hydrants and other on-site improvements or construct such improvements in order to extend service in accordance with R-14-2-406(B), payment of the off-site facilities fees required hereunder shall be made by the Applicant no later than 15 calendar days after receipt of notification from the Company that the Utilities Division of the Arizona Corporation Commission has approved the Main Extension Agreement in accordance with R-14-2-406(M). No other charges for off-site facilities shall be included in the Main Extension Agreement.

2) For those connecting to an existing main: In the event that the Applicant is not required to enter into a Main Extension Agreement, the off-site facilities fee charges hereunder shall be due and payable at the time the meter and service line installation fee is due and payable.

(D) Off-Site Facilities Construction By Developer: Company and Applicant may agree to construction of off-site facilities necessary to serve a particular development by Applicant, which facilities are then conveyed to Company. In that event, Company shall credit the total cost of such off-site facilities as an offset to off-site facilities fees due under this Tariff. If the total cost of the off-site facilities constructed by Applicant and conveyed to Company is less than the applicable off-site facilities fees under this Tariff, Applicant shall pay the remaining amount of off-site facilities fees owed hereunder. If the total cost of the off-site facilities contributed by Applicant and conveyed to Company is more than the applicable off-site facilities fees under this Tariff, Applicant shall be refunded the difference upon acceptance of the off-site facilities by the Company.

(E) Failure to Pay Charges; Delinquent Payments: The Company will not be obligated to make an advance commitment to provide or actually provide water service to any Applicant in the event that the Applicant has not paid in full all charges hereunder. Under no circumstances will the Company set a meter or otherwise allow service to be established if the entire amount of any payment due hereunder has not been paid.

(F) Large Subdivision and/or Development Projects: In the event that the Applicant is engaged in the development of a residential subdivision and/or development containing more than 150 lots, the Company may, in its discretion, agree to payment of off-site facilities fees in installments. Such installments may be based on the residential subdivision and/or development's phasing, and should attempt to equitably apportion the payment of charges hereunder based on the Applicant's construction schedule and water service requirements. In the alternative, the Applicant shall post an irrevocable letter of credit in favor of the Company in a commercially reasonable form, which may be drawn by the Company consistent with the actual or planned construction and hook up schedule for the subdivision and/or development.

(G) Off-Site Facilities Fees Non-refundable: The amounts collected by the Company as off-site facilities fees shall be non-refundable contributions in aid of construction.

(H) Use of Off-Site Facilities Fees Received: All funds collected by the Company as off-site facilities fees shall be deposited into a separate interest bearing bank account and used solely for the purposes of paying for the costs of installation of off-site facilities, including repayment of loans obtained for the installation of off-site facilities that will benefit the entire water system (either all of Valley Vista or all of Sedona).

(I) Off-Site Facilities Fee in Addition to On-site Facilities: The off-site facilities fee shall be in addition to any costs associated with the construction of on-site facilities under a Main Extension Agreement.

(J) Disposition of Excess Funds: After all necessary and desirable off-site facilities are constructed utilizing funds collected pursuant to this tariff, or if the off-site facilities fee tariff has been terminated by order of the Arizona Corporation Commission, any funds remaining in the bank account shall be refunded. The manner of the refund shall be determined by the Commission at the time a refund becomes necessary.

(K) Fire Flow Requirements: In the event the Applicant for service has fire flow requirements that require additional facilities not covered by this tariff, such additional facilities shall be constructed under a separate Main Extension Agreement as a non- refundable contribution and shall be in addition to the off-site facilities fees.

(L) Status Reporting Requirements to the Commission: The Company shall submit a calendar year off-site facilities fee status report each January 31st to Docket Control for the prior twelve (12) month period, beginning January 31, 2014, until the off-site facilities fee tariff is no longer in effect. This status report shall contain a list of all customers that have paid the off-site facilities fee, the amount each has paid, the physical location/address of the property in respect of which such fee was paid, the amount of money spent from the account, the amount of interest earned on the funds within the tariff account, and a list of all facilities (by system location) that have been installed with the tariff funds during the twelve (12) month period.

BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
Chairman
GARY PIERCE
Commissioner
BRENDA BURNS
Commissioner
BOB BURNS
Commissioner
SUSAN BITTER SMITH
Commissioner

IN THE MATTER OF THE APPLICATION OF ARIZONA WATER COMPANY, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY, AND FOR ADJUSTMENTS TO ITS RATES AND CHARGES FOR UTILITY SERVICE FURNISHED BY ITS NORTHERN GROUP AND FOR CERTAIN RELATED APPROVALS	DOCKET NO. W-01445A-12-0348

DIRECT

TESTIMONY

OF

JOHN A. CASSIDY

PUBLIC UTILITIES ANALYST

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

FEBRUARY 28, 2013

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EXECUTIVE SUMMARY
ARIZONA WATER COMPANY, NORTHERN GROUP
DOCKET NO. W-01445A-12-0348

The direct testimony of Staff witness John A. Cassidy addresses the following issues:

Capital Structure – Staff recommends that the Commission adopt a capital structure for Arizona Water Company ("Company") for this proceeding consisting of 48.9 percent debt and 51.1 percent equity.

Cost of Equity – Staff recommends that the Commission adopt a 9.1 percent return on equity ("ROE") for the Company. Staff's estimated ROE for the Company is based on the average of its discounted cash flow ("DCF") method and capital asset pricing model ("CAPM") cost of equity methodology estimates for the sample companies of 8.8 percent for the DCF and 8.2 percent for the CAPM. Staff's recommended ROE includes an upward economic assessment adjustment of 60 basis points.

Cost of Debt – Staff recommends that the Commission adopt a 6.8 percent cost of debt for the Company.

Overall Rate of Return – Staff recommends that the Commission adopt a 7.9 percent overall rate of return.

Ms. Ahern's Testimony – The Commission should reject the Company's proposed 11.3 percent ROE for the following reasons:

> Ms. Ahern's single-stage constant growth DCF estimates rely exclusively on analysts' forecasts of earnings per share growth to calculate the dividend growth (g) component. She overstates the current dividend yield (D_0/P_0) component by using a 60-day average stock price (P_0) value. Ms. Ahern's risk-premium model estimates derived from the CAPM and PRPM are inflated due to use of a forecasted risk-free (R_f) rate. In her Executive Summary, she concludes that the average cost of common equity to her proxy group is 10.34 percent, based upon the results obtained from her DCF, RPM and CAPM models; however, this 10.34 percent figure does not represent the arithmetic mean of the results obtained from her models, and thus appears to be overstated. Her recommended cost of equity includes a 50 basis point upward adjustment for credit risk, and a 45 basis point upward adjustment for business risk.

I. INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is John A. Cassidy. I am a Public Utilities Analyst employed by the Arizona Corporation Commission ("Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Briefly describe your responsibilities as a Public Utilities Analyst.

A. I am responsible for the examination of financial and statistical information included in utility rate applications and other financial matters, including studies to estimate the cost of capital component in rate filings used to determine the overall revenue requirement, and for preparing written reports, testimonies and schedules to present Staff's recommendations to the Commission on these matters.

Q. Please describe your educational background and professional experience.

A. I hold a Bachelor of Arts degree in History from Arizona State University, a Master of Library Science degree from the University of Arizona, and an MBA degree with an emphasis in Finance from Arizona State University. While pursuing my MBA degree, I was inducted into Beta Gamma Sigma, the National Business Honor Society. I have passed the CPA exam, but opted not to pursue certification. I have worked professionally as a librarian, financial consultant, tax auditor, and, as a former Commission employee, served as Staff's cost of capital witness in rate case evidentiary proceedings.

Q. What is the scope of your testimony in this case?

A. My testimony provides Staff's recommended capital structure, return on equity ("ROE") and overall rate of return ("ROR") for establishing the revenue requirement for Arizona Water Company's ("AWC" or "Company") pending rate application.

Q. Please provide a brief description of AWC.

A. AWC is a public service corporation engaged in providing water utility service in portions of Cochise, Coconino, Gila, Maricopa, Navajo, Pima, Pinal, and Yavapai Counties, Arizona, pursuant to certificates of convenience and necessity granted by the Arizona Corporation Commission. At present, the Company operates three groups of water systems, the Northern, Eastern and Western Groups, which collectively serve approximately 84,800 customers. In the instant docket, the Company requests an increase in the rates and charges for utility service to its Northern Group. The Company's Northern Group consists of the Navajo (Lakeside and Overgaard) and Verde Valley (Sedona, Pinewood, and Rimrock) water systems. In the test-year ended December 31, 2011, the Company's Northern Group of water systems served approximately 19,700 customers.

Summary of Testimony and Recommendations

Q. Briefly summarize how Staff's cost of capital testimony is organized.

A. Staff's cost of capital testimony is presented in eleven sections. Section I is this introduction. Section II discusses the concept of weighted average cost of capital ("WACC"). Section III presents the concept of capital structure and presents Staff's recommended capital structure for AWC in this proceeding. Section IV presents Staff's cost of debt for AWC. Section V discusses the concepts of ROE and risk. Section VI presents the methods employed by Staff to estimate Arizona's ROE. Section VII presents the findings of Staff's ROE analysis. Section VIII presents Staff's final cost of equity estimates for AWC. Section IX presents Staff's ROR recommendation. Section X presents Staff's comments on the direct testimony of the Company's witness, Ms. Pauline M. Ahern. Finally, section XI presents the conclusions.

Q. Have you prepared any exhibits to accompany your testimony?

A. Yes. I prepared nine schedules (JAC-1 to JAC-9) that support Staff's cost of capital analysis.

Q. What is Staff's recommended rate of return for AWC?

A. Staff recommends a 7.9 percent overall ROR, as shown in Schedule JAC-1. Staff's ROR recommendation is based on cost of equity estimates for the sample companies of 8.8 percent from the discounted cash flow method ("DCF") and 8.2 percent from the capital asset pricing method ("CAPM"). Staff recommends adoption of a 60 basis point upward economic assessment adjustment, resulting in a 9.1 percent ROE. With a capital structure of 48.9 percent debt, 51.1 percent equity and cost of debt of 6.8 percent, this results in a 7.9 percent overall ROR.

Arizona Water's Proposed Overall Rate of Return

Q. Briefly summarize AWC's proposed capital structure, cost of debt, ROE and overall ROR for this proceeding.

A. Table 1 summarizes the Company's proposed capital structure, cost of debt, ROE and overall ROR in this proceeding:

Table 1

	Weight	**Cost**	**Weighted Cost**
Long-term Debt	48.95%	6.82%	3.34%
Common Equity	51.05%	11.30%	5.77%
Cost of Capital/ROR			**9.11%**

Arizona is proposing an overall rate of return of 9.11 percent.

II. THE WEIGHTED AVERAGE COST OF CAPITAL

Q. Briefly explain the cost of capital concept.

A. The cost of capital is the opportunity cost of choosing one investment over others with equivalent risk. In other words, the cost of capital is the return that stakeholders expect for investing their financial resources in a determined business venture over another business venture.

Q. What is the overall cost of capital?

A. The cost of capital to a company issuing a variety of securities (i.e., stock and indebtedness) is an average of the cost rates on all issued securities adjusted to reflect the relative amounts for each security in the company's entire capital structure. Thus, the overall cost of capital is the WACC.

Q. How is the WACC calculated?

A. The WACC is calculated by adding the weighted expected returns of a firm's securities. The WACC formula is:

Equation 1.

$$WACC = \sum_{i=1}^{n} W_i * r_i$$

In this equation, W_i is the weight given to the i^{th} security (the proportion of the i^{th} security relative to the portfolio) and r_i is the expected return on the i^{th} security.

Q. Can you provide an example demonstrating application of Equation 1?

A. Yes. For this example, assume that an entity has a capital structure composed of 60 percent debt and 40 percent equity. Also, assume that the embedded cost of debt is 6.0 percent and the expected return on equity, i.e., the cost of equity, is 10.5 percent. Calculation of the WACC is as follows:

WACC = (60% * 6.0%) + (40% * 10.5%)

WACC = 3.60% + 4.20%

WACC = 7.80%

The weighted average cost of capital in this example is 7.80 percent. The entity in this example would need to earn an overall rate of return of 7.80 percent to cover its cost of capital.

III. CAPITAL STRUCTURE

Background

Q. Please explain the capital structure concept.

A. The capital structure of a firm is the relative proportions of each type of security:--short-term debt, long-term debt (including capital leases), preferred stock and common stock--that are used to finance the firm's assets.

Q. How is the capital structure expressed?

A. The capital structure of a company is expressed as the percentage of each component of the capital structure (capital leases, short-term debt, long-term debt, preferred stock and common stock) relative to the entire capital structure.

As an example, the capital structure for an entity that is financed by $20,000 of short-term debt, $85,000 of long-term debt (including capital leases), $15,000 of preferred stock and $80,000 of common stock is shown in Table 2.

Table 2

Component			%
Short-Term Debt	$20,000	($20,000/$200,000)	10.0%
Long-Term Debt	$85,000	($85,000/$200,000)	42.5%
Preferred Stock	$15,000	($15,000/$200,000)	7.5%
Common Stock	$80,000	($80,000/$200,000)	40.0%
Total	$200,000		100%

The capital structure in this example is composed of 10.0 percent short-term debt, 42.5 percent long-term debt, 7.5 percent preferred stock and 40.0 percent common stock.

Arizona Water's Capital Structure

Q. What capital structure does AWC propose?

A. The Company proposes a capital structure composed of 48.95 percent debt and 51.05 percent common equity.

Q. How does AWC's capital structure compare to capital structures of publicly-traded water utilities?

A. Schedule JAC-4 shows the capital structures of six publicly-traded water companies ("sample water companies" or "sample water utilities") as of December 2011. The average capital structure for the sample water utilities is comprised of approximately 51.6 percent debt and 48.4 percent equity.

Staff's Capital Structure

Q. What is Staff's recommended capital structure for AWC?

A. Staff recommends a capital structure composed of 48.9 percent debt and 51.1 percent equity. Staff's recommends the same December 31, 2011 test year end capital structure proposed by the Company; however, Staff carries its number out to only one decimal point, whereas AWC carries its number out to two decimal points.

IV. COST OF DEBT

Q. What is the basis for the Company's proposed 6.82 percent cost of debt?

A. The Company's proposed 6.82 percent cost of debt reflects AWC's embedded cost of long-term debt. As shown in Schedule D-2, AWC currently has $75,000,000 in long-term debt outstanding, comprised of three non-amortizing loans carrying different interest rates and having different maturity dates.[1]

V. RETURN ON EQUITY

Background

Q. Please define the term "cost of equity capital."

A. The cost of equity is the rate of return that investors expect to earn on their investment in a business entity given its risk. In other words, the cost of equity to the entity is the investors' expected rate of return on other investments of similar risk. As investors have a wide selection of stocks to choose from, they will choose stocks with similar risks but higher returns. Therefore, the market determines the entity's cost of equity.

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[1] The Company's long–term debt consists of the following: $15,000,000 of Series K debt, due April 1, 2031, at a cost of 8.05 percent; $25,000,000 of Series L debt, due August 1, 2036, at a cost of 6.30 percent; and $35,000,000 of Series M debt, due August 1, 2038, at a cost of 6.67 percent.

Q. Is there a correlation between interest rates and the cost of equity?

A. Yes, there is a positive correlation between interest rates and the cost of equity, as the two tend to move in the same direction. This relationship is reflected in the CAPM formula. The CAPM is a market-based model employed by Staff for estimating the cost of equity. The CAPM is further discussed in Section VI of this testimony.

Q. What has been the general trend of interest rates in recent years?

A. A chronological chart of interest rates is a good tool to show interest rate history and identify trends. Chart 1 graphs intermediate U.S. treasury rates from January 18, 2002, to January 27, 2012.

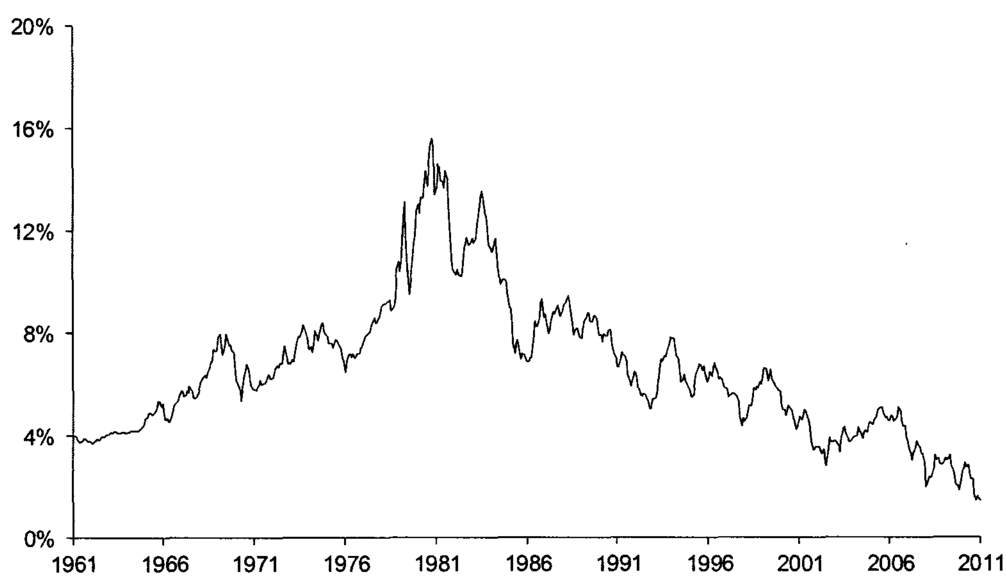
Chart 1: Average Yield on 5-, 7-, & 10-Year Treasuries

Chart 1 shows that intermediate-term interest rates trended downward from 2002 to mid-2003, trended upward through mid-2007, trended downward through late-2008, trended upward through early-2010, trended downward through late 2010, trended upward to early-2011, and are currently trending down from the existing, relatively low rates.

Q. What has been the general trend in interest rates longer term?

A. U.S. Treasury rates from December 1961 - December 2011 are shown in Chart 2. The chart shows that interest rates trended upward through the early-1980s and have trended downward over the last 30 years.

Chart 2: History of 5- and 10-Year Treasury Yields



Source: Federal Reserve

Q. Do these trends suggest anything in terms of cost of equity?

A. Yes. As previously noted, interest rates and cost of equity tend to move in the same direction; therefore, the cost of equity has generally declined in the past 30 years.

Q. Do actual returns represent the cost of equity?

A. No. The cost of equity represents investors' *expected* returns and not realized returns.

Q. Is there any information available that leads to an understanding of the relationship between the equity returns required for a regulated water utility and those required in the market as a whole?

A. Yes. A comparison of betas, a component of the CAPM discussed in Section VI, for the water utility industry and the market provide insight into this relationship. In theory, the market has a beta value of 1.0, with stocks bearing greater risk (less risk) than the market having beta values higher than (lower than) 1.0, respectively. Furthermore, in accordance with the CAPM, the cost of equity capital moves in the same direction as beta. Therefore, because the average beta value (0.71)[2] for a water utility is less than 1.0, the required return on equity for a regulated water utility is below that of the market as a whole.

Risk

Q. Please define risk in relation to cost of capital.

A. Risk, as it relates to an investment, is the variability or uncertainty of the returns on a particular security. Investors are risk averse and require a greater potential return to invest in relatively greater risk opportunities, i.e., investors require compensation for taking on additional risk. Risk is generally separated into two components. Those components

[2] See Schedule JAC-7.

are market risk (systematic risk) and non-market risk (diversifiable risk or firm-specific risk).

Q. What is market risk?

A. Market risk or systematic risk is the risk of an investment that cannot be reduced through diversification. Market risk stems from factors that affect all securities, such as recessions, war, inflation and high interest rates. Since these factors affect the entire market they cannot be eliminated through diversification. Market risk does not impact each security to the same degree. The degree to which a given security's return is affected by market fluctuations can be measured using Beta. Beta reflects the business risk and the financial risk of a security.

Q. Please define business risk.

A. Business risk is the fluctuation of earnings inherent in a firm's operations and environment, such as competition and adverse economic conditions that may impair its ability to provide returns on investment. Companies in the same or similar line of business tend to experience the same fluctuations in business cycles.

Q. Please define financial risk.

A. Financial risk is the fluctuation of earnings, inherent in the use of debt financing, that may impair a firm's ability to provide adequate return; the higher the percentage of debt in a company's capital structure, the greater its exposure to financial risk.

Q. Do business risk and financial risk affect the cost of equity?

A. Yes.

Q. Is a firm subject to any other risk?

A. Yes. Firms are also subject to unsystematic or firm-specific risk. Examples of unsystematic risk include losses caused by labor problems, nationalization of assets, loss of a big client or weather conditions. Investors can eliminate firm-specific risk by holding a diverse portfolio; thus, it is not of concern to diversified investors.

Q. How does the Company's financial risk exposure compare to that of Staff's sample group of water companies?

A. JAC-4 shows the capital structures of the six sample water companies as of December 31, 2011, and AWC's capital structure as of the December 31, 2011 test year end. As shown, the sample water utilities were capitalized with approximately 51.6 percent debt and 48.4 percent equity, while AWC's capital structure consists of 48.9 percent debt and 51.1 percent equity. Thus, while closely approximating the capital structure of the average sample water utility, AWC has slightly less exposure to financial risk, as it has less debt (48.9%) in its capital structure than does the average sample company (51.6%).

Q. Is firm-specific risk measured by beta?

A. No. Firm-specific risk is not measured by beta.

Q. Is the cost of equity affected by firm-specific risk?

A. No. Since firm-specific risk can be eliminated through diversification, it does not affect the cost of equity.

Q. Can investors expect additional returns for firm-specific risk?

A. No. Investors who hold diversified portfolios can eliminate firm-specific risk and, consequently, do not require any additional return. Since investors who choose to be less than fully-diversified must compete in the market with fully-diversified investors, the former cannot expect to be compensated for unique risk.

VI. ESTIMATING THE COST OF EQUITY

Introduction

Q. Did Staff directly estimate the cost of equity for AWC?

A. No. Since AWC is not a publicly-traded company, Staff is unable to directly estimate its cost of equity due to the lack of firm-specific market data. Instead, Staff estimated the Company's cost of equity indirectly, using a representative sample group of publicly traded water utilities as a proxy, taking the average of the sample group to reduce the sample error resulting from random fluctuations in the market at the time the information is gathered.

Q. What companies did Staff select as proxies or comparables for AWC?

A. Staff's sample consists of the following six publicly-traded water utilities: American States Water, California Water, Connecticut Water Services, Middlesex Water, Aqua America and SJW Corp. Staff chose these companies because they are publicly-traded and receive the majority of their earnings from regulated operations.

Q. What models did Staff implement to estimate the Company's cost of equity?

A. Staff used two market-based models to estimate the cost of equity for AWC: the DCF model and the CAPM.

Q. Please explain why Staff chose the DCF and CAPM models.

A. Staff chose to use the DCF and CAPM models because they are widely-recognized market-based models and have been used extensively to estimate the cost of equity. An explanation of the DCF and CAPM models follows.

Discounted Cash Flow Model Analysis

Q. Please provide a brief summary of the theory upon which the DCF method of estimating the cost of equity is based.

A. The DCF method of stock valuation is based on the theory that the value of an investment is equal to the sum of the future cash flows generated from the aforementioned investment discounted to the present time. This method uses expected dividends, market price and dividend growth rate to calculate the cost of capital. Professor Myron Gordon pioneered the DCF method in the 1960s. The DCF method has become widely used to estimate the cost of equity for public utilities due to its theoretical merit and its simplicity. Staff used the financial information for the relevant six sample companies in the DCF model and averaged the results to determine an estimated cost of equity for the sample companies.

Q. Does Staff use more than one version of the DCF?

A. Yes. Staff uses two versions of the DCF model: the constant-growth DCF and the multi-stage or non-constant growth DCF. The constant-growth DCF assumes that an entity's dividends will grow indefinitely at the same rate. The multi-stage growth DCF model assumes the dividend growth rate will change at some point in the future.

The Constant-Growth DCF

Q. What is the mathematical formula used in Staff's constant-growth DCF analysis?

A. The constant-growth DCF formula used in Staff's analysis is:

Equation 2:

$$K = \frac{D_1}{P_0} + g$$

where:

K = the cost of equity
D_1 = the expected annual dividend
P_0 = the current stock price
g = the expected infinite annual growth rate of dividends

Equation 2 assumes that the entity has a constant earnings retention rate and that its earnings are expected to grow at a constant rate. According to Equation 2, a stock with a current market price of $10 per share, an expected annual dividend of $0.45 per share and an expected dividend growth rate of 3.0 percent per year has a cost of equity to the entity of 7.5 percent reflected by the sum of the dividend yield ($0.45/ $10 = 4.5 percent) and the 3.0 percent annual dividend growth rate.

Q. How did Staff calculate the expected dividend yield (D_1/P_0) component of the constant-growth DCF formula?

A. Staff calculated the expected yield component of the DCF formula by dividing the expected annual dividend (D_1) by the spot stock price (P_0) after the close of market on January 23, 2013, as reported by *MSN Money*.

Q. Why did Staff use the January 23, 2012, spot price rather than a historical average stock price to calculate the dividend yield component of the DCF formula?

A. The current, rather than historic, market price is used in order to be consistent with financial theory. In accordance with the Efficient Market Hypothesis, the current stock price is reflective of all available information on a stock, and as such reveals investors' expectations of future returns. Use of historical average stock prices illogically discounts the most recent information in favor of less recent information. The latter is stale and is representative of underlying conditions that may have changed.

Q. How did Staff estimate the dividend growth (g) component of the constant-growth DCF model represented by Equation 2?

A. The dividend growth component used by Staff is determined by the average of six different estimation methods, as shown in Schedule JAC-8. Staff calculated historical and projected growth estimates on dividend-per-share ("DPS"),[3] earnings-per-share ("EPS")[4] and sustainable growth bases.

Q. Why did Staff examine EPS growth to estimate the dividend growth component of the constant-growth DCF model?

A. Historic and projected EPS growth are used because dividends are related to earnings. Dividend distributions may exceed earnings in the short run, but cannot continue indefinitely. In the long term, dividend distributions are dependent on earnings.

[3] Derived from information provided by *Value Line.*
[4] Derived from information provided by *Value Line.*

Q. How did Staff estimate historical DPS growth?

A. Staff estimated historical DPS growth by calculating a compound annual DPS growth rate for each of its sample companies over the 10-year period, 2003-2012.[5] As shown in Schedule JAC-5, the average historical DPS growth rate for the sample was 3.4 percent.

Q. How did Staff estimate projected DPS growth?

A. Staff calculated an average of the projected DPS growth rates for the sample water utilities from *Value Line* through the period, 2015-2017. The average projected DPS growth rate is 3.7 percent, as shown in Schedule JAC-5.

Q. How did Staff estimate historical EPS growth rate?

Staff estimated historical EPS growth by calculating a compound annual EPS growth rate for each of its sample companies over the 10-year period, 2002-2011.[6] As shown in Schedule JAC-5, the average historical EPS growth rate for the sample was 4.2 percent.

Q. How did Staff estimate projected EPS growth?

A. Staff calculated an average of the projected EPS growth rates for the sample water utilities from *Value Line* through the period, 2015-2017. The average projected EPS growth rate is 7.0 percent, as shown in Schedule JAC-5.

Q. How does Staff calculate its historical and projected sustainable growth rates?

A. Historical and projected sustainable growth rates are calculated by adding their respective retention growth rate terms (br) to their respective stock financing growth rate terms (vs), as shown in Schedule JAC-6.

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[5] Staff updated its 10-year historical dividend growth calculation to cover the period, 2003-2012, as the annual dividend paid by each sample company in 2012 is known and measureable.

[6] The 10-year historical EPS growth calculation covers the period, 2002-2001, as the 2012 annual EPS number for each sample company has yet to be announced.

Q. What is retention growth?

A. Retention growth is the growth in dividends due to the retention of earnings. The retention growth concept is based on the theory that dividend growth cannot be achieved unless the company retains and reinvests a portion of its earnings. The retention growth is used in Staff's calculation of sustainable growth shown in Schedule JAC-6.

Q. What is the formula for the retention growth rate?

A. The retention growth rate is the product of the retention ratio and the book/accounting return on equity. The retention growth rate formula is:

Equation 3:

$$\text{Retention Growth Rate} = br$$

where: b = the retention ratio (1 – dividend payout ratio)
r = the accounting/book return on common equity

Q. How did Staff calculate the average historical retention growth rate (br) for the sample water utilities?

A. Staff calculated the mean of the 10-year average historical retention rate for each sample company over the period, 2002-2011. As shown in Schedule JAC-6, the historical average retention (br) growth rate for the sample is 2.9 percent.

Q. How did Staff estimate its projected retention growth rate (br) for the sample water utilities?

A. Staff used the retention growth projections for the sample water utilities for the period, 2015-2017, from *Value Line.* As shown in Schedule JAC-6, the projected average retention growth rate for the sample companies is 4.3 percent.

Q. When can retention growth provide a reasonable estimate of future dividend growth?

A. The retention growth rate is a reasonable estimate of future dividend growth when the retention ratio is reasonably constant and the entity's market price to book value ("market-to-book ratio") is expected to be 1.0. The average retention ratio has been reasonably constant in recent years. However, the market-to-book ratio for the sample water utilities is 2.1, notably higher than 1.0, as shown in Schedule JAC-7.

Q. Is there any financial implication of a market-to-book ratio greater than 1.0?

A. Yes. A market-to-book ratio greater than 1.0 implies that investors expect an entity to earn an accounting/book return on its equity that exceeds its cost of equity. The relationship between required returns and expected cash flows is readily observed in the fixed securities market. For example, assume an entity contemplating issuance of bonds with a face value of $10 million at either 6 percent or 8 percent and, thus, paying annual interest of $600,000 or $800,000, respectively. Regardless of investors' required return on similar bonds, investors will be willing to pay more for the bonds if issued at 8 percent than if the bonds are issued at 6 percent. For example, if the current interest rate required by investors is 6 percent, then they would bid $10 million for the 6 percent bonds and more than $10 million for the 8 percent bonds. Similarly, if equity investors require a 9 percent return and expect an entity to earn accounting/book returns of 13 percent, the market will bid up the price of the entity's stock to provide the required return of 9 percent.

Q. How has Staff generally recognized a market-to-book ratio exceeding 1.0 in its cost of equity analyses in recent years?

A. Staff has assumed that investors expect the market-to-book ratio to remain greater than 1.0. Given that assumption, Staff has added a stock financing growth rate (vs) term to the retention ratio (br) term to calculate its historical and projected sustainable growth rates.

Q. Do the historical and projected sustainable growth rates Staff uses to develop its DCF cost of equity in this case continue to include a stock financing growth rate term?

A. Yes.

Q. What is stock financing growth?

A. Stock financing growth is the growth in an entity's dividends due to the sale of stock by that entity. Stock financing growth is a concept derived by Myron Gordon and discussed in his book *The Cost of Capital to a Public Utility.*[7] Stock financing growth is the product of the fraction of the funds raised from the sale of stock that accrues to existing shareholders (v) and the fraction resulting from dividing the funds raised from the sale of stock by the existing common equity (s).

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[7] Gordon, Myron J. *The Cost of Capital to a Public Utility*. MSU Public Utilities Studies, Michigan, 1974. pp 31-35.

Q. What is the mathematical formula for the stock financing growth rate?

A. The mathematical formula for stock financing growth is:

Equation 4:

$$\text{Stock Financing Growth} = vs$$

where: v = Fraction of the funds raised from the sale of stock that accrues to existing shareholders

s = Funds raised from the sale of stock as a fraction of the existing common equity

Q. How is the variable *v* presented above calculated?

A. Variable v is calculated as follows:

Equation 5:

$$v = 1 - \left(\frac{book\ value}{market\ value} \right)$$

For example, assume that a share of stock has a \$30 book value and is selling for \$45. Then, to find the value of v, the formula is applied:

$$v = 1 - \left(\frac{30}{45} \right)$$

In this example, v is equal to 0.33.

Q. How is the variable *s* presented above calculated?

A. Variable s is calculated as follows:

Equation 6:

$$s = \frac{\text{Funds raised from the issuance of stock}}{\text{Total existing common equity before the issuance}}$$

For example, assume that an entity has \$150 in existing equity, and it sells \$30 of stock. Then, to find the value of s, the formula is applied:

$$s = \left(\frac{30}{150}\right)$$

In this example, s is equal to 20.0 percent.

Q. What is the *vs* term when the market-to-book ratio is equal to 1.0?

A. A market-to-book ratio of 1.0 reflects that investors expect an entity to earn a book/accounting return on their equity investment equal to the cost of equity. When the market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the entity accrues to the benefit of existing shareholders, i.e., the term v is equal to zero (0.0). Consequently, the vs term is also equal to zero (0.0). When stock financing growth is zero, dividend growth depends solely on the br term.

Q. What is the effect of the *vs* term when the market-to-book ratio is greater than 1.0?

A. A market-to-book ratio greater than 1.0 reflects that investors expect an entity to earn a book/accounting return on their equity investment greater than the cost of equity. Equation 5 shows that, when the market-to-book ratio is greater than 1.0, the v term is also greater than zero. The excess by which new shares are issued and sold over book value per share of outstanding stock is a contribution that accrues to existing stockholders in the form of a higher book value. The resulting higher book value leads to higher expected earnings and dividends. Continued growth from the vs term is dependent upon the continued issuance and sale of additional shares at a price that exceeds book value per share.

Q. What *vs* estimate did Staff calculate from its analysis of the sample water utilities?

A. Staff estimated an average stock financing growth rate of 2.0 percent for the sample water utilities, as shown in Schedule JAC-6.

Q. What would occur if an entity had a market-to-book ratio greater than 1.0 as a result of investors expecting earnings to exceed its cost of equity, and subsequently experienced newly-authorized rates equal only to its cost of equity?

A. *Ceteris paribus*, holding all other factors constant, one would expect market forces to move the company's stock price lower, closer to a market-to-book ratio of 1.0, to reflect investor expectations of reduced expected future cash flows.

Q. If the average market-to-book ratio of Staff's sample water utilities were to fall to 1.0 due to authorized ROEs equaling their cost of equity, would inclusion of the vs term be necessary to Staff's constant-growth DCF analysis?

A. No. As discussed above, when the market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the entity accrues to the benefit of existing shareholders because the *v* term equals to zero and, consequently, the *vs* term also equals zero. When the market-to-book ratio equals 1.0, dividend growth depends solely on the *br* term. Staff's inclusion of the *vs* term assumes that the market-to-book ratio continues to exceed 1.0 and that the water utilities will continue to issue and sell stock at prices above book value with the effect of benefitting existing shareholders.

Q. What are Staff's historical and projected sustainable growth rates?

A. Staff's estimated historical sustainable growth rate is 4.9 percent based on an analysis of earnings retention for the sample water companies. Staff's projected sustainable growth rate is 6.3 percent based on retention growth projected by *Value Line.* Schedule JAC-6 presents Staff's estimates of the sustainable growth rate.

Q. What is Staff's expected infinite annual growth rate in dividends?

A. Staff's expected dividend growth rate (g) is 4.9 percent, which is the average of historical and projected DPS, EPS, and sustainable growth estimates. Staff's calculation of the expected infinite annual growth rate in dividends is shown in Schedule JAC-8.

Q. What is Staff's constant-growth DCF estimate for the sample utilities?

A. Staff's constant-growth DCF estimate is 8.0 percent, as shown in Schedule JAC-3.

The Multi-Stage DCF

Q. Why did Staff implement the multi-stage DCF model to estimate AWC's cost of equity?

A. Staff generally uses the multi-stage DCF model to consider the assumption that dividends may not grow at a constant rate. The multi-stage DCF uses two stages of growth, the first stage (near-term) having a four-year duration, followed by the second stage (long-term) of constant growth.

Q. What is the mathematical formula for the multi-stage DCF?

A. The multi-stage DCF formula is shown in the following equation:

Equation 7:

$$P_0 = \sum_{t=1}^{n} \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n}\left[\frac{1}{(1+K)}\right]^n$$

Where:

P_0 = current stock price

D_t = dividends expected during stage 1

K = cost of equity

n = years of non – constant growth

D_n = dividend expected in year n

g_n = constant rate of growth expected after year n

Q. What steps did Staff take to implement its multi-stage DCF cost of equity model?

A. First, Staff projected future dividends for each of the sample water utilities using near-term and long-term growth rates. Second, Staff calculated the rate (cost of equity) which equates the present value of the forecasted dividends to the current stock price for each of the sample water utilities. Lastly, Staff calculated an overall sample average cost of equity estimate.

Q. How did Staff calculate near-term (stage-1) growth?

A. The stage-1 growth rate is based on *Value Lines*'s projected dividends for the next twelve months, when available, and on the average dividend growth (g) rate of 4.9 percent, calculated in Staff's constant DCF analysis for the remainder of the stage.

Q. How did Staff estimate long-term (stage-2) growth?

A. Staff calculated the stage-2 growth rate using the arithmetic mean rate of growth in Gross Domestic Product ("GDP") from 1929 to 2011.[8] Using the GDP growth rate assumes that the water utility industry is expected to grow at the same rate as the overall economy.

Q. What is the historical GDP growth rate that Staff used to estimate stage-2 growth?

A. Staff used 6.5 percent to estimate the stage-2 growth rate.

Q. What is Staff's multi-stage DCF estimate for the sample utilities?

A. Staff's multi-stage DCF estimate is 9.5 percent, as shown in Schedule JAC-3.

Q. What is Staff's overall DCF estimate for the sample utilities?

A. Staff's overall DCF estimate is 8.8 percent. Staff calculated the overall DCF estimate by averaging the constant growth DCF (8.0%) and multi-stage DCF (9.5%) estimates, as shown in Schedule JAC-3.

Capital Asset Pricing Model

Q. Please describe the CAPM.

A. The CAPM is used to determine the prices of securities in a competitive market. The CAPM model describes the relationship between a security's investment risk and its market rate of return. Under the CAPM, an investor requires the expected return of a security to equal the rate on a risk-free security plus a risk premium. If the investor's expected return does not meet or beat the required return, the investment is not economically justified. The model also assumes that investors will sufficiently diversify

[8] www.bea.doc.gov.

their investments to eliminate any non-systematic or unique risk.[9] In 1990, Professors Harry Markowitz, William Sharpe, and Merton Miller earned the Nobel Prize in Economic Sciences for their contribution to the development of the CAPM.

Q. Did Staff use the same sample water utilities in its CAPM and DCF cost of equity estimation analyses?

A. Yes. Staff's CAPM cost of equity estimation analysis uses the same sample water companies as its DCF cost of equity estimation analysis.

Q. What is the mathematical formula for the CAPM?

A. The mathematical formula for the CAPM is:

Equation 8:

$$K = R_f + \beta (R_m - R_f)$$

where:

R_f = risk free rate

R_m = return on market

β = beta

$R_m - R_f$ = market risk premium

K = expected return

The equation shows that the expected return (K) on a risky asset is equal to the risk-free interest rate (R_f) plus the product of the market risk premium ($R_m - R_f$) multiplied by beta (β) where beta represents the riskiness of the investment relative to the market.

[9] The CAPM makes the following assumptions: 1) single holding period; 2) perfect and competitive securities market; 3) no transaction costs; 4) no restrictions on short selling or borrowing; 5) the existence of a risk-free rate; and 6) homogeneous expectations.

Q. What is the risk-free rate?

A. The risk-free rate is the rate of return of an investment free of default risk.

Q. What does Staff use as surrogates to represent estimations of the risk-free rates of interest in its historical and current market risk premium CAPM methods?

A. Staff uses separate parameters as surrogates for the estimations of the risk-free rates of interest for the historical market risk premium CAPM cost of equity estimation and the current market risk premium CAPM cost of equity estimation. Staff uses the average of three (5-, 7-, and 10-year) intermediate-term U.S. Treasury securities' spot rates in its historical market risk premium CAPM cost of equity estimation, and the 30-year U.S. Treasury bond spot rate in its current market risk premium CAPM cost of equity estimation. Rates on U.S. Treasuries are largely verifiable and readily available.

Q. What does beta measure?

A. Beta is a measure of a security's price volatility, or systematic risk, relative to the market as a whole. Since systematic risk cannot be diversified away, it is the only risk that is relevant when estimating a security's required return. Using a baseline market beta coefficient of 1.0, a security having a beta value less than 1.0 will be less volatile (i.e., less risky) than the market. A security with a beta value greater than 1.0 will be more volatile (i.e., more risky) than the market.

Q. How did Staff estimate AWC's beta?

A. Staff used the average of the *Value Line* betas for the sample water utilities as a proxy for the Company's beta. Schedule JAC-7 shows the *Value Line* betas for each of the sample water utilities. The 0.71 average beta coefficient for the sample water utilities is Staff's estimated beta value for Arizona. A security with a beta value of 0.71 has less volatility than the market.

Q. What is the market risk premium ($R_m - R_f$)?

A. The market risk premium is the expected return on the market, minus the risk-free rate. Simplified, it is the return an investor expects as compensation for market risk.

Q. What did Staff use for the market risk premium?

A. Staff uses separate calculations for the market risk premium in its historical and current market risk premium CAPM methods.

Q. How did Staff calculate an estimate for the market risk premium in its historical market risk premium CAPM method?

A. Staff uses the intermediate-term government bond income returns published in the Ibbotson Associates' *Stocks, Bonds, Bills, and Inflation 2012 Yearbook* to calculate the historical market risk premium. Ibbotson Associates calculates the historical risk premium by averaging the historical arithmetic differences between the S&P 500 and the intermediate-term government bond income returns for the period 1926-2011. Staff's historical market risk premium estimate is 7.1 percent, as shown in Schedule JAC-3.

Q. How did Staff calculate an estimate for the market risk premium in its current market risk premium CAPM method?

A. Staff solves equation 8 above to arrive at a market risk premium using a DCF-derived expected return (K) of 12.87 (2.2 + 10.67[10]) percent using the expected dividend yield (2.2 percent over the next twelve months) and the annual per share growth rate (10.67 percent)

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[10] The three to five year price appreciation is 50%. $1.50^{0.25} - 1 = 10.67\%$.

that *Value Line* projects for all dividend-paying stocks under its review[11] along with the current long-term risk-free rate (30-year Treasury note at 3.02 percent) and the market's average beta of 1.0. Staff calculated the current market risk premium as 9.85 percent,[12] as shown in Schedule JAC-3.

Q. What is the result of Staff's historical market risk premium CAPM and current market risk premium CAPM cost of equity estimations for the sample utilities?

A. Staff's cost of equity estimates are 6.3 percent using the historical market risk premium CAPM and 10.0 percent using the current market risk premium CAPM.

Q. What is Staff's overall CAPM estimate for the sample utilities?

A. Staff's overall CAPM cost of equity estimate is 8.2 percent which is the average of the historical market risk premium CAPM (6.3 percent) and the current market risk premium CAPM (10.0 percent) estimates, as shown in Schedule JAC-3.

VII. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS

Q. What is the result of Staff's constant-growth DCF analysis to estimate the cost of equity for the sample water utilities?

A. Schedule JAC-3 shows the result of Staff's constant-growth DCF analysis. The result of Staff's constant-growth DCF analysis is as follows:

$$k = 3.1\% + 4.9\%$$

$$k = \mathbf{8.0\%}$$

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[11] January 25, 2013 issue date.
[12] 12.87% = 3.02% + (1) (9.85%).

Staff's constant-growth DCF estimate of the cost of equity for the sample water utilities is 8.0 percent.

Q. What is the result of Staff's multi-stage DCF analysis to estimate of the cost of equity for the sample utilities?

A. Schedule JAC-9 shows the result of Staff's multi-stage DCF analysis. The result of Staff's multi-stage DCF analysis is:

Company	**Equity Cost Estimate (k)**
American States Water	9.0%
California Water	9.8%
Aqua America	9.0%
Connecticut Water	9.7%
Middlesex Water	10.3%
SJW Corp	9.2%
Average	**9.5%**

Staff's multi-stage DCF estimate of the cost of equity for the sample water utilities is 9.5 percent.

Q. What is Staff's overall DCF estimate of the cost of equity for the sample utilities?

A. Staff's overall DCF estimate of the cost of equity for the sample utilities is 8.8 percent. Staff calculated an overall DCF cost of equity estimate by averaging Staff's constant growth DCF (8.0 percent) and Staff's multi-stage DCF (9.5 percent) estimates, as shown in Schedule JAC-3.

Q. What is the result of Staff's historical market risk premium CAPM analysis to estimate of the cost of equity for the sample utilities?

A. Schedule JAC-3 shows the result of Staff's CAPM analysis using the historical risk premium estimate. The result is as follows:

$$k = 1.3\% + 0.71 * 7.1\%$$

$$k = 6.3\%$$

Staff's CAPM estimate (using the historical market risk premium) of the cost of equity to the sample water utilities is 6.3 percent.

Q. What is the result of Staff's current market risk premium CAPM analysis to estimate the cost of equity for the sample utilities?

A. Schedule JAC-3 shows the result of Staff's CAPM analysis using the current market risk premium estimate. The result is:

$$k = 3.0\% + 0.71 * 9.8\%$$

$$k = 10.0\%$$

Staff's CAPM estimate (using the current market risk premium) of the cost of equity to the sample water utilities is 10.0 percent.

Q. What is Staff's overall CAPM estimate of the cost of equity for the sample utilities?

A. Staff's overall CAPM estimate for the sample utilities is 8.2 percent. Staff's overall CAPM estimate is the average of the historical market risk premium CAPM (6.3 percent) and the current market risk premium CAPM (10.0 percent) estimates, as shown in Schedule JAC-3.

Q. Please summarize the results of Staff's cost of equity analysis for the sample utilities.

A. The following table shows the results of Staff's cost of equity analysis:

Table 2

Method	Estimate
Average DCF Estimate	8.8%
Average CAPM Estimate	8.2%
Overall Average	**8.5%**

Staff's average estimate of the cost of equity to the sample water utilities is 8.5 percent.

VIII. FINAL COST OF EQUITY ESTIMATES FOR ARIZONA WATER COMPANY

Q. Please compare AWC's capital structure to that of the six sample water companies.

A. The average capital structure for the sample water utilities is composed of 48.4 percent equity and 51.6 percent debt, as shown in Schedule JAC-4. AWC's capital structure is composed of 51.1 percent equity and 48.9 percent debt. In this case, since AWC's capital structure is less leveraged than that of the average sample water utilities' capital structure, its stockholders bear less financial risk than the sample water utilities.

Q. Does AWC's reduced financial risk affect its cost of equity?

A. Yes. As previously discussed, financial risk is a component of market risk and investors require compensation for market risk. Since AWC's financial risk is less than that of the average sample water companies, its cost of equity is lower than that of the sample water companies.

Q. Is Staff recommending a downward financial risk adjustment to AWC's cost of equity in recognition of the Company having less exposure to financial risk than the sample water utilities?

A. No. AWC has a balanced capital structure, and one which closely approximates that of the average sample water utility. Accordingly, Staff is not recommending a downward financial risk adjustment to the Company's cost of equity.

Q. Did Staff consider factors other than the results of its technical models in its cost of equity analysis?

A. Yes. In consideration of the relatively uncertain status of the economy and the market that currently exists, Staff is proposing an economic assessment adjustment to the cost of equity. In this case, Staff recommends a 60 basis point (0.6 percent) upward economic assessment adjustment to AWC's cost of equity, as shown in Schedule JAC-3.

Q. What is Staff's ROE estimate for AWC?

A. Staff determined a COE estimate of 8.5 percent for Arizona based on cost of equity estimates for the sample companies of 8.8 percent for the DCF and 8.2 percent for the CAPM. Staff recommends adoption of a 60 basis point upward economic assessment adjustment resulting in a 9.1 percent Staff-recommended ROE, as shown in Schedule JAC-3.

IX. RATE OF RETURN RECOMMENDATION

Q. What overall rate of return did Staff determine for AWC?

A. Staff determined a 7.9 percent ROR for the Company, as shown in Schedule JAC-1 and the following table:

Table 3

	Weight	Cost	Weighted Cost
Long-term Debt	48.9%	6.8%	3.3%
Common Equity	51.1%	9.1%	4.6%
Overall ROR			7.9%

X. STAFF RESPONSE TO COMPANY'S COST OF CAPITAL WITNESS MS. PAULINE M. AHERN

Q. Please summarize Ms. Ahern's analyses and recommendations.

A. Ms. Ahern recommends an 11.30 percent ROE based on estimates derived from the single-stage constant growth DCF method, two risk premium ("RPM") models (the Predictive Risk Premium Model ("PRPM") and a Risk Premium Model using an Adjusted Total Market Approach), and two CAPM models (the Traditional CAPM and the Empirical CAPM) for a proxy group of nine sample companies. Ms. Ahern derives an estimated cost of equity of 9.13 percent from her DCF analysis, an average 10.47 percent cost of equity from her two RPM models, and an average 11.01 percent cost of equity from her two CAPM models. She concludes that the average cost of common equity to her sample group of companies is 10.34 percent, based upon the results obtained from her DCF, RPM and CAPM models. To this 10.34 percent indicated cost of equity figure, Ms. Ahern adds an upward 50 basis point credit risk adjustment and an upward 45 basis point business risk adjustment, thus arriving at her 11.30 percent recommended cost of equity. Her overall recommended rate of return for the Company is 9.11 percent.

For purposes of her single-stage constant growth DCF analysis, Ms. Ahern relies exclusively on analysts' forecasts for EPS growth to estimate the dividend growth (g) component (See Exhibit PMA-7, p. 1), and she utilizes a 60-day average stock price (P_0) to calculate an average dividend (D_0/P_0) yield (See Exhibit PMA-7, p. 1, Note 1).

For purposes of her CAPM, ECAPM and PRPM analyses, Ms. Ahern employs a projected risk free (R_f) rate of 4.26 percent, a figure representing an average of the historical income returns (5.32 percent) on 30-year U.S. Treasury Bonds covering the period, 1926-2011, and a forecasted 30-year U.S. Treasury yield (3.20 percent), obtained from *Blue Chip Financial Forecasts* covering the 18-month period, Q1 2012 – Q2 2013 (See Exhibit PMA-10, Page 2 of 2).

Q. Does Staff have any comments on Ms. Ahern's sole reliance on analysts' forecasts of EPS growth to estimate the dividend growth rate (g) in her single-stage constant growth DCF analysis?

A. Yes. Exclusive reliance on analysts' forecasts of earnings growth to forecast DPS is inappropriate because it assumes that investors do not look at other relevant information such as historical dividend and earnings growth. Generally, analysts' forecasts are known to be overly optimistic. Sole use of analysts' forecasts to calculate the expected dividend growth rate, (g), serves to inflate that component of the DCF model and, consequently, the estimated cost of equity. The appropriate growth rate to use in the DCF model is the dividend growth rate expected by *investors*, not by analysts. Investors are assumed to be rational, and as such will want to take into consideration all relevant available information prior to making an investment decision. Therefore, it is reasonable to assume that investors would consider both historical measures of past growth, as well as analysts' forecasts of future growth.

Q. Does Staff have evidence to support its assertion that exclusive reliance on analysts' forecasts of earnings growth in the DCF model would result in inflated cost of equity estimates?

A. Yes. Experts in the financial community have commented on the optimism in analysts' forecasts of future earnings.[13] A study cited by David Dreman in his book *Contrarian Investment Strategies: The Next Generation* found that *Value Line* analysts were optimistic in their forecasts by 9 percent annually, on average for the 1987 – 1989 period. Another study conducted by David Dreman found that between 1982 and 1997, analysts overestimated the growth of earnings of companies in the S&P 500 by 188 percent.

Burton Malkiel, of Princeton University, conducted a study of the 1- and 5-year earnings forecasts made by some of the most respected names in the investment business. His results showed that when compared with actual earnings growth rates, the 5-year forecasts made by professional analysts were far less accurate than estimates derived from several naïve forecasting models, such as the long-run growth rate in national income. In the following excerpt from his book, A Random Walk Down Wall Street, Professor Malkiel discusses the results of his study:

> When confronted with the poor record of their five-year growth estimates, *the security analysts honestly, if sheepishly, admitted that five years ahead is really too far in advance to make reliable projections.* They protested that although long-term projections are admittedly important, they really ought to be judged on their ability to project earnings changes one year ahead. Believe it or not, it turned out that their one-year forecasts were even worse than their five-year projections.
>
> The analysts fought back gamely. They complained that it was unfair to judge their performance on a wide cross section of

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[13] See Seigel, Jeremy J. Stocks for the Long Run. 2002. McGraw-Hill. New York. p. 100. Dreman, David. *Contrarian Investment Strategies: The Next Generation*. 1998. Simon & Schuster. New York. pp. 97-98. Malkiel, Burton G. *A Random Walk Down Wall Street*. 2003. W.W. Norton & Co. New York. p. 175.
Testimony of Professors Myron J. Gordon and Lawrence I. Gould, consultant to the Trial Staff (Common Carrier Bureau), FCC Docket 79-63, p. 95.

> industries, because earnings for high-tech firms and various "cyclical" companies are notoriously hard to forecast. *"Try us on utilities," one analyst confidently asserted. At the time they were considered among the most stable group of companies because of government regulation. So we tried it and they didn't like it. Even the forecasts for the stable utilities were far off the mark.*[14] (Emphasis added)

Q. Are investors aware of the problems related to analysts' forecasts?

A. Yes. In addition to books, there are numerous published articles appearing in *The Wall Street Journal* and other financial publications that cast doubt on the accuracy of research analysts' forecasts.[15] Investors, being keenly aware of these inherent biases in forecasts, will use other methods to assess future growth.

Q. Should DPS growth be considered in a DCF analysis?

A. Yes. As previously stated in section VI of this testimony, the current market price of a stock is equal to the present value of all expected future dividends, not future earnings. Professor Jeremy Siegel from the Wharton School of Finance stated:

> Note that the price of the stock is always equal to the present value of all future *dividends* and not the present value of future earnings. Earnings not paid to investors can have value only if they are paid as dividends or other cash disbursements at a later date. Valuing stock as the present discounted value of future earnings is manifestly wrong and greatly overstates the value of the firm.[16]

For valuation purposes, therefore, earnings paid out in the form of a dividend have paramount relevancy to investors. Dividends, unlike earnings, can not be manipulated or

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[14] Malkiel, Burton G. A Random Walk Down Wall Street. 2003. W.W. Norton & Co. New York. p. 175.

[15] See Smith, Randall & Craig, Suzanne. "Big Firms Had Research Ploy: Quiet Payments Among Rivals." *The Wall Street Journal.* April 30, 2003. Brown, Ken. "Analysts: Still Coming Up Rosy." *The Wall Street Journal.* January 27, 2003. p. C1. Karmin, Craig. "Profit Forecasts Become Anybody's Guess." *The Wall Street Journal.* January 21, 2003. p. C1. Gasparino, Charles. "Merrill Lynch Investigation Widens." *The Wall Street Journal.* April 11, 2002. p. C4. Elstein, Aaron. "Earnings Estimates Are All Over the Map." *The Wall Street Journal.* August 2, 2001. p. C1. Dreman, David. "Don't Count on those Earnings Forecasts." *Forbes.* January 26, 1998. p. 110.

[16] Seigel, Jeremy J. Stocks for the Long Run. 2002. McGraw-Hill. New York. P. 93.

overstated. Thus, historical DPS growth should receive appropriate consideration when estimating the market cost of equity in the DCF model.

Q. Does Staff consider Ms. Ahern's use of a 60-day average stock price to be appropriate for purposes of calculating the current dividend (D_0/P_0) yield in the constant growth DCF model?

A. No. The current dividend yield (D_0/P_0) component in the DCF model is better reflected by using a current spot price, not an historical average stock price. Use of average stock prices to calculate the current dividend yield employs stale information and is not reflective of current investor expectations (See Exhibit PMA-7, Page 1).

Q. Turning to Ms. Ahern's CAPM, ECAPM and PRPM analyses, does Staff agree with her use of a projected risk-free (R_f) rate based upon both historical and forecasted estimates?

A. No. The appropriate risk-free interest rate to be used is the current rate borne by investors in the market. Ms. Ahern's use of a projected risk-free rate representing the average of both an historical measure, and a forecasted estimate, of the 30-year U.S. Treasury yield serves to overstate the estimated market cost of equity derived from her CAPM, ECAPM and PRPM models.

Q. What risk-free rate does Ms. Ahern use in her CAPM and PRPM risk premium models?

A. In both, Ms. Ahern employs a risk-free (R_f) rate of 4.26 percent, a figure representing the historical average of 30-year U.S Treasury Bond yields covering the period 1926-2011 (5.32%), as reported by Morningstar, and the forecasted 30-year U.S Treasury yield (3.20%) projected by *Blue Chip Financial Forecasts* covering the period Q1 2012 – Q2

2013 (See Exhibit PMA-10, Page 2). At present, the current 30-year long-term Treasury yield is 3.02 percent. However, at the time Ms. Ahern gathered the market data utilized in her cost of capital testimony, the current yield on 30-year U.S. Treasury securities had been even lower.

Q. When did Ms. Ahern gather the market information utilized in her cost of capital Direct testimony?

A. A review of the exhibits presented in her testimony suggests that she gathered the market-based financial data utilized in her cost of capital testimony during the month of July, 2012.[17]

Q. What was the current yield on 30-year U.S. Treasury securities at the time Ms. Ahern appears to have gathered the market data used in her cost of capital Direct testimony?

A. During July 2012, yields on long-term 30-year U.S. Treasury securities closed at levels ranging from a high of 2.74 percent (July 3, 2012) to a low of 2.46 percent (July 25, 2012). The average closing yield on 30-year U.S. Treasury securities during the month of July, 2012, was 2.59 percent.[18]

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[17] In Exhibit PMA-7, Ms. Ahern acknowledges that she obtained closing stock price information used in her DCF analysis on July 6, 2012, and downloaded other market data from the internet on July 9, 2012. In Exhibit PMA-8, Ms. Ahern states that she obtained on-line data on July 6, 2012. In Exhibit PMA-10, page 2, she acknowledges gathering information from Value Line for the 13-week period ending, July 13, 2012.

[18] Source: www.treasury.gov

Q. Does Staff advocate that for purposes of estimating the cost of equity with the CAPM, ECAPM and PRPM models, Ms. Ahern should have employed a risk-free rate (R_f) based upon a current measure for the 30-year U.S. Treasury yield at the time she gathered the market data needed to perform her analysis in July 2012?

A. Yes. Use of a risk-free rate based upon the then current 30-year long-term U.S Treasury Bond yield would have been appropriate, as the 4.26 percent risk-free rate used by Ms. Ahern in her CAPM and PRPM analyses is not reflective of the 30-year U.S. Treasury yield borne by investors in July 2012. In absolute terms, the risk-free rate used by Ms. Ahern exceeds by 167 basis points the 2.59 percent average monthly closing yield for 30-year U.S. Treasury securities in July 2012 (4.26% - 2.59% = 1.67%); in relative terms, this represents an overstatement of 64.48 percent ((4.26% - 2.59%) / 2.59%). Consequently, the cost of equity estimates derived from Ms. Ahern's CAPM, ECAPM and PRPM models have been overstated and should not be relied upon in this proceeding.

Q. Has Staff endeavored to quantify the magnitude of the overstatement to the cost of equity estimates derived from Ms. Ahern's CAPM, ECAPM and PRPM models stemming from the use of a projected risk-free rate?

A. Yes. Staff has prepared three Exhibits to do so (Exhibits JAC-A, JAC-B and JAC-C). Exhibit JAC-A presents Staff's restatement of Ms. Ahern's Exhibit PMA-10, Exhibit JAC-B presents a restatement of Exhibit PMA-9 (page 2), and Exhibit JAC-C presents a restatement of PMA-1.

Q What was the overstatement to Ms. Ahern's overall CAPM cost of equity estimate resulting from the use of a projected risk-free rate of 4.26 percent?

A. As shown in Exhibit JAC-A, Ms. Ahern's use of a projected risk-free rate of 4.26 percent generated an overall CAPM average estimate for the cost of common equity of 11.29

percent, and a median cost of equity of 11.01 percent. Had Ms. Ahern instead used the then current 2.59 percent 30-year U.S. Treasury yield as her risk-free rate, her overall average CAPM estimate would have been 10.03 percent, with the median cost of equity based upon her sample results being 9.73 percent. Because Ms. Ahern relies upon the median estimate for purposes of her cost of capital recommendations, Exhibit JAC-A demonstrates that use of a projected risk-free rate resulted in an overstatement to her CAPM estimate of 128 basis points (11.01% - 9.73% = 1.28%).

Q What was the overstatement to Ms. Ahern's PRPM cost of equity estimate resulting from the use of a projected risk-free rate of 4.26 percent?

A. As shown in Exhibit JAC-B, Ms. Ahern's use of a projected risk-free rate of 4.26 percent generated an average PRPM estimate for the cost of common equity of 13.01 percent, and a median cost of equity of 11.03 percent. Had Ms. Ahern instead used the then current 2.59 percent 30-year U.S. Treasury yield as her risk-free rate, her overall average PRPM estimate would have been 11.34 percent, with the median cost of equity based upon her sample results being 9.36 percent. Because Ms. Ahern relies upon the median estimate for purposes of her cost of capital recommendations, Exhibit JAC-A demonstrates that use of a projected risk-free rate resulted in an overstatement to her PRPM estimate of 167 basis points (11.03% - 9.36% = 1.67%).

Q. Does this mean than Ms. Ahern's overall RPM estimate for the cost of equity has been overstated by 167 basis points, and if not, by how much is her RPM estimate overstated?

A. No. For purposes of her RPM analysis, Ms. Ahern utilizes the median estimate derived from her PRPM model (11.03%) as well as the cost of equity estimate derived from her Risk Premium Model Using an Adjusted Total Market Approach (9.90%), with the average of those two values being her overall RPM estimate. As shown in Exhibit PMA-9, page 1, Ms. Ahern's overall RPM estimate of the cost of equity is 10.47 percent ((11.03% + 9.90%) / 2 = 10.47%). However, due to the use of a projected risk-free rate of 4.26 percent in her PRPM model, Ms. Ahern did overstate her overall RPM estimate. As noted above, use of a 2.59 percent risk-free rate in the PRPM model would have generated a median cost of equity estimate of 9.36 percent, and when taking the average of this value and the 9.90 percent estimate derived from her Risk Premium Model Using an Adjusted Total Market Approach, her overall RPM estimate would have been 9.63 percent ((9.36% + 9.90%) / 2 = 9.63%). Thus, the overstatement to Ms. Ahern's overall RPM cost of equity estimate resulting from her use of a projected risk-free rate is 84 basis points (10.47% - 9.63% = 0.84%).

Q. What impact did the use of an inflated 4.26 percent risk-free rate have upon Ms. Ahern's overall estimated cost of equity?

A. As shown in Exhibit JAC-C, use of a projected 4.26 percent risk-free rate served to significantly inflate Ms. Ahern's overall estimated cost of equity. In Staff's restatement of Exhibit PMA-1, column [1] reflects the results of Ms. Ahern's DCF, RPM and CAPM cost of equity estimates, her indicated cost of common equity based thereon, and her overall recommended cost of equity, as presented in Exhibit PMA-1. Column [2] presents the same information as in column [1], with the exception that the indicated cost of common equity (line 4) is calculated as the arithmetic mean of the results derived from Ms. Ahern's DCF, RPM and CAPM models (lines 1-3). As shown, Ms. Ahern's indicated cost of equity appears to be overstated by 14 basis points (10.34% - 10.20% = 0.14%). Lastly, column [3] presents Ms. Ahern's estimates for the indicated cost of equity to her sample group of companies, restated to reflect use of the then current 2.59 percent 30-year U.S. Treasury yield as the risk-free (R_f) rate in her CAPM, ECAPM and PRPM models.

As shown, Ms. Ahern's indicated cost of common equity has been overstated by 84 basis points (10.34% - 9.50% = 0.84%).

Q. Did Staff attempt to restate Ms. Ahern's DCF cost of equity results to quantify the impact that exclusive use of analysts' forecasts of EPS growth had upon her dividend growth (g) rate?

A. No. Staff made no attempt to restate those results. However, as was noted above exclusive use of analysts' forecasts as a proxy for dividend growth in the DCF model serves to inflate (g), and thus there is good reason to believe that Ms. Ahern's 9.13 percent DCF estimate for the cost of equity appearing in Exhibit JAC-C, line1, has likewise been overstated.

Q. Does Staff have any comment regarding Ms. Ahern's proposed 50 basis point credit risk adjustment?

A. Yes. Ms. Ahern's proposed credit risk adjustment has no merit, as a 1994 study by S. Brooks Marshall which investigated the relationship between equity risk and bond risk concluded that bond ratings fail to explain a large portion of total equity risk (defined as equity risk premiums and beta). Specifically, the author concluded:

> "These data show that using a bond rating as the sole measure for selecting a set of comparable companies for a cost-of-equity determination will not necessarily produce a group of companies that have similar equity risk. Most of this risk is explained by characteristics other than bond ratings."[19]

Accordingly, the Company's proposed 50 basis point credit risk adjustment should be denied.

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[19] Marshall, S. Brooks. "Bond Ratings: A Poor Predictor of Equity Risk," *Public Utilities Fortnightly*, Oct. 15, 1994, pp. 27-28.

Q. Does Staff have any comment regarding Ms. Ahern's proposed 45 basis point business risk adjustment?

A. Yes. The Commission previously ruled in Decision No. 64282[20] for Arizona Water that firm size does not warrant recognition of a risk premium stating, "We do not agree with the Company's proposal to assign a risk premium to Arizona Water based on it size relative to other publicly traded water utilities…." The Commission confirmed its previous ruling in Decision No. 64727[21] for Black Mountain Gas agreeing with Staff that "the 'firm size phenomenon' does not exist for regulated utilities, and that therefore there is no need to adjust for risk for small firm size in utility regulation." All companies have firm-specific risks; therefore, the existence of unique risks for a company does not lead to the conclusion that its total risk is greater than other entities. Moreover, as previously discussed, investors cannot expect compensation for firm-specific risk since it can be eliminated through diversification.

XI. CONCLUSION

Q. Please summarize Staff's recommendations.

A. Staff recommends that the Commission adopt a 7.9 percent overall rate of return for the Company based on a capital structure composed of 48.9 percent debt and 51.1 percent equity, Staff's 8.5 percent cost of equity estimate, and Staff's 60 basis point (0.6 percent) upward economic assessment adjustment.

Q. Does this conclude your direct testimony?

A. Yes, it does.

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[20] Dated December 28, 2001.
[21] Dated April 17, 2002.

Arizona Water Company, Northern Group - Cost of Capital Calculation
Capital Structure
And Weighted Average Cost of Capital
Staff Recommended and Company Proposed

[A]	[B]	[C]	[D]
Description	Weight (%)	Cost	Weighted Cost
Staff Recommended Structure			
Debt	48.9%	6.8%	3.3%
Common Equity	51.1%	9.1%	4.6%
Weighted Average Cost of Capital			**7.9%**
Company Proposed Structure			
Debt	48.95%	6.82%	3.34%
Common Equity	51.05%	11.3%	5.77%
Weighted Average Cost of Capital			**9.11%**

[D] : [B] x [C]

Supporting Schedules: JAC-3 and JAC-4.

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Arizona Water Company, Northern Group - Cost of Capital Calculation
Final Cost of Equity Estimates
Sample Water Utilities

[A]	[B]		[C]		[D]		[E]
DCF Method			D_1/P_0[1]	+	g[2]	=	k
Constant Growth DCF Estimate			3.1%	+	4.9%	=	8.0%
Multi-Stage DCF Estimate						=	9.5%
Average DCF Estimate							**8.8%**
CAPM Method	Rf	+	β[5]	x	(Rp)	=	k
Historical Market Risk Premium[3]	1.3%	+	0.71	x	7.1% [6]	=	6.3%
Current Market Risk Premium[4]	3.0%	+	0.71	x	9.8% [7]	=	10.0%
Average CAPM Estimate							**8.2%**
					Average of Overall Estimates		**8.5%**
					Economic Assessment Adjustment		0.6%
					Sub-Total		9.1%
					Financial risk adjustment		0.0%
					Total		**9.1%**

1 MSN Money and Value Line

2 Schedule JAC-8

3 Risk-free rate (Rf) for 5, 7, and 10 year Treasury rates from the U.S. Treasury Department at www.ustreas.gov

4 Risk-free rate (Rf) for 30 Year Treasury bond rate from the U.S. Treasury Department at www.ustreas.gov

5 Value Line

6 Historical Market Risk Premium (Rp) calculated from Ibbotson Associates SBBI 2012 Yearbook data

7 Testimony

Arizona Water Company, Northern Group - Cost of Capital Calculation
Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
Company	Debt	Common Equity	Total
American States Water	46.0%	54.0%	100.0%
California Water	53.3%	46.7%	100.0%
Aqua America	53.9%	46.1%	100.0%
Connecticut Water	57.1%	42.9%	100.0%
Middlesex Water	43.3%	56.7%	100.0%
SJW Corp	55.7%	44.3%	100.0%
Average Sample Water Utilities	**51.6%**	**48.4%**	**100.0%**
Arizona Water - Actual Capital Structure	**48.9%**	**51.1%**	**100.0%**

Source:
Sample Water Companies from Value Line

Arizona Water Company, Northern Group - Cost of Capital Calculation
Growth in Earnings and Dividends
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
Company	Dividends Per Share **2003 to 2012** DPS[1,2]	Dividends Per Share Projected DPS[1,3]	Earnings Per Share **2002 to 2011** EPS[1]	Earnings Per Share Projected EPS[1]
American States Water	3.9%	5.9%	5.1%	4.7%
California Water	1.2%	3.4%	6.2%	8.6%
Aqua America	7.7%	4.5%	7.3%	5.6%
Connecticut Water	1.7%	3.5%	0.4%	9.1%
Middlesex Water	1.7%	1.9%	2.4%	8.3%
SJW Corp	4.4%	3.0%	3.7%	5.5%
Average Sample Water Utilities	**3.4%**	**3.7%**	**4.2%**	**7.0%**

1 Value Line

2 Value Line -- Ten- year historical dividend growth updated from 2003-2012 as it is known and measureable.

3 Value Line -- Projected DPS growth covers the four-year period, 2012-2016.

Arizona Water Company, Northern Group - Cost of Capital Calculation
Sustainable Growth
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
Company	Retention Growth **2002 to 2011** br	Retention Growth Projected br	Stock Financing Growth vs	Sustainable Growth **2002 to 2011** br + vs	Sustainable Growth Projected br + vs
American States Water	3.6%	5.3%	2.5%	6.1%	7.8%
California Water	2.2%	4.8%	2.2%	4.4%	7.0%
Aqua America	4.4%	5.2%	2.3%	6.7%	7.6%
Connecticut Water	2.2%	4.0%	1.0%	3.2%	5.0%
Middlesex Water	1.3%	3.3%	3.7%	5.0%	7.0%
SJW Corp	3.7%	3.2%	0.1%	3.8%	3.3%
Average Sample Water Utilities	**2.9%**	**4.3%**	**2.0%**	**4.9%**	**6.3%**

[B]: Value Line
[C]: Value Line
[D]: Value Line and MSN Money
[E]: [B]+[D]
[F]: [C]+[D]

Arizona Water Company, Northern Group - Cost of Capital Calculation
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]
					Value Line	Raw
		Spot Price		Mkt To	Beta	Beta
Company	Symbol	1/23/2013	Book Value	Book	β	βraw
American States Water	AWR	**51.03**	22.26	2.3	**0.70**	0.52
California Water	CWT	**19.35**	11.40	1.7	**0.65**	0.45
Aqua America	WTR	**26.99**	9.49	2.8	**0.60**	0.37
Connecticut Water	CTWS	**29.76**	13.67	2.2	**0.75**	0.60
Middlesex Water	MSEX	**19.52**	11.97	1.6	**0.70**	0.52
SJW Corp	SJW	**26.77**	15.36	1.7	**0.85**	0.75
Average				**2.1**	**0.71**	**0.53**

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

[G]: (-0.35 + [F]) / 0.67

Arizona Water Company, Northern Group - Cost of Capital Calculation
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Utilities

[A]	[B]
Description	g
DPS Growth - Historical[1]	3.4%
DPS Growth - Projected[1]	3.7%
EPS Growth - Historical[1]	4.2%
EPS Growth - Projected[1]	7.0%
Sustainable Growth - Historical[2]	4.9%
Sustainable Growth - Projected[2]	6.3%
Average	**4.9%**

1 Schedule JAC-5

2 Schedule JAC-6

Arizona Water Company, Northern Group - Cost of Capital Calculation
Multi-Stage DCF Estimates
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[H]	[I]
Company	Current Mkt. Price (P_o)[1]	Projected Dividends[2] (Stage 1 growth) (D_t)				Stage 2 growth[3] (g_n)	Equity Cost Estimate (K)[4]
	1/23/2013	d_1	d_2	d_3	d_4		
American States Water	51.0	1.30	1.36	1.43	1.50	6.5%	9.0%
California Water	19.4	0.66	0.69	0.73	0.76	6.5%	9.8%
Aqua America	27.0	0.69	0.73	0.76	0.80	6.5%	9.0%
Connecticut Water	29.8	0.98	1.03	1.08	1.14	6.5%	9.7%
Middlesex Water	19.5	0.77	0.81	0.84	0.89	6.5%	10.3%
SJW Corp	26.8	0.74	0.78	0.82	0.86	6.5%	9.2%

Average **9.5%**

$$P_0 = \sum_{t=1}^{n} \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n}\left[\frac{1}{(1+K)}\right]^n$$

Where : P_0 = current stock price
D_t = dividends expected during stage 1
K = cost of equity
n = years of non – constant growth
D_n = dividend expected in year n
g_n = constant rate of growth expected after year n

1 [B] see Schedule JAC-7
2 Derived from Value Line Information
3 Average annual growth in GDP 1929 - 2011 in current dollars.
4 Internal Rate of Return of Projected Dividends

Arizona Water Company, Northern Group - Cost of Capital Calculation
Capitalization

	Interest Rate	Annual Interest		Amount outstanding as of 12/31/2011	Percentage of Capital Structure
Long-Term Debt					
	8.05%	1,207,500		15,000,000	
	6.3%	1,575,000		25,000,000	
	6.7%	2,334,500		35,000,000	
Long-Term Debt		5,117,000	$	75,000,000	48.95%
Short-Term Debt		-	$	-	0.00%
Total Debt	6.82%	$ 5,117,000	$	75,000,000.00	48.95%
Common Equity					
Common Shares Outstanding				2,700,000	
Paid in Capital				19,309,347	
Retained Earnings				56,211,847	
Total Common Equity			$	78,221,194	51.05%
Total Capitalization			$	153,221,194	100.00%

Staff Restatement to Ahern Exhibit PMA-10
(Indicated Cost of Common Equity -- CAPM and ECAPM)

	Company Proposed						Staff Restated					
	Beta	Market Risk Premium	Rf Rate	Traditional CAPM	ECAPM	Indicated Cost of Common Equity	Beta	Market Risk Premium	Rf Rate	Traditional CAPM	ECAPM	Indicated Cost of Common Equity
1 American States Water	0.7	9.73%	4.26%	11.07%	11.80%		0.7	10.29%	2.59%	9.79%	10.56%	
2 American Water Works	0.65	9.73%	4.26%	10.58%	11.44%		0.65	10.29%	2.59%	9.28%	10.18%	
3 Aqua America	0.65	9.73%	4.26%	10.58%	11.44%		0.65	10.29%	2.59%	9.28%	10.18%	
4 Artesian Resources	0.55	9.73%	4.26%	9.61%	10.71%		0.55	10.29%	2.59%	8.25%	9.40%	
5 California Water	0.65	9.73%	4.26%	10.58%	11.44%		0.65	10.29%	2.59%	9.28%	10.18%	
6 Connecticut Water	0.75	9.73%	4.26%	11.56%	12.17%		0.75	10.29%	2.59%	10.31%	10.95%	
7 Middlesex Water	0.7	9.73%	4.26%	11.07%	11.80%		0.7	10.29%	2.59%	9.79%	10.56%	
8 SJW Corporation	0.85	9.73%	4.26%	12.53%	12.90%		0.85	10.29%	2.59%	11.33%	11.72%	
9 York Water	0.65	9.73%	4.26%	10.58%	11.44%		0.65	10.29%	2.59%	9.28%	10.18%	
Average	0.68			10.91%	11.68%	11.29%	0.68			9.62%	10.43%	10.03%
Median	0.65			10.58%	11.44%	11.01%	0.65			9.28%	10.18%	9.73%

Source: Traditional CAPM computed as per Exhibit PMA-10, p. 2, Note 3 .
Empirical CAPM computed as per Exhibit PMA-10, p. 2, Note 4 .

Ahern Market Risk Premium (MRP) - Staff Restated	Ahern Market Risk Premium Based on Projected 4.26% Risk-Free Rate		Staff Restatement of Ahern Market Risk Premium Risk Free Rate assumed to be 2.59% (July 2012 Average 30-Year U.S. Treasury Yield)	
Ahern Forecasted 3-5 Year Total Market Return:	16.92%		16.92%	
Less: Staff Risk-free rate (Current 30-Year U.S. Treasury Yield)	4.26%		2.59%	
a) Forecasted 3-5 Year Total Annual Market Return - Adjusted		12.66%		14.33%
b) Predictive Risk Premium Model (PRPM) MRP		10.08%		10.08%
c) Morningstar (Ibbotson Associates) Historic Monthly MRP (1926-2011)		6.45%		6.45%
Ahern Market Risk Premium (arithmetic mean of a, b and c)		**9.73%**		
Ahern Market Risk Premium (arithmetic mean of a, b and c) - Staff Restated				**10.29%**

Source: Market Risk Premium computed as per Exhibit PMA-10, page 2, Note 1.

Staff Restatement to Ahern Exhibit PMA-9
(Indicated Cost of Common Equity -- CAPM and ECAPM)

Company Proposed

	American States Water	American Water Works	Aqua America	Artesian Resources	California Water	Connecticut Water	Middlesex Water	SJW Corporation	York Water	Sample Average	Sample Median
PRPM Derived Risk Premium	6.55%	14.71%	13.11%	7.25%	6.70%	6.02%	6.41%	6.77%	11.21%		
Projected Risk-Free Rate - Ahern	4.26%	4.26%	4.26%	4.26%	4.26%	4.26%	4.26%	4.26%	4.26%		
Indicated Cost of Common Equity	10.81%	18.97%	17.37%	11.51%	10.96%	10.28%	10.67%	11.03%	15.47%		
										13.01%	
											11.03%

Staff Restated

	American States Water	American Water Works	Aqua America	Artesian Resources	California Water	Connecticut Water	Middlesex Water	SJW Corporation	York Water	Sample Average	Sample Median
PRPM Derived Risk Premium	6.55%	14.71%	13.11%	7.25%	6.70%	6.02%	6.41%	6.77%	11.21%		
Projected Risk-Free Rate	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%	2.59%		
Indicated Cost of Common Equity	9.14%	17.30%	15.70%	9.84%	9.29%	8.61%	9.00%	9.36%	13.80%		
										11.34%	
											9.36%

Staff Restatement to Ahern Exhibit PMA-1
(Summary of Common Equity Cost Rate)

No.	Principal Methods	[1] As Presented in Ahern Exhibit PMA-1	[2] Computed as Aritmetic Mean of DCF, RPM & CAPM Results (Lines 1,2, and 3)	[3] As Adjusted by Staff for inflated Rf Rate
1	Discounted Cash Flow Model (DCF)	9.13%	9.13%	9.13%
2	Risk Premium Model (RPM)	10.47%	10.47%	9.63%
3	Capital Asset Pricing Model (CAPM)	11.01%	11.01%	9.73%
4	Indicated Cost of Common Equity	10.34%	10.20%	9.50%
5	Credit Risk Adjustment	0.50%	0.50%	0.50%
6	Business Risk Adjustment	0.45%	0.45%	0.45%
7	Indicated Common Equity Cost Rate	11.29%	11.15%	10.45%
8	Recommended Common Equity Cost Rate	11.30%		

[1]: Indicated cost of common equity (line 4) as presented by Ms. Ahern in Exhibit PMA-1 based upon her DCF, RPM and CAPM cost of equity results.
[2]: Indicated cost of common equity (line 4) calculated as the arithmetic mean of Ms. Ahern's DCF, RPM and CAPM cost of equity results.
[3]: Indicated cost of common equity (line 4) calculated as the arithmetic mean of Ms. Ahern's DCF, RPM and CAPM cost of equity results, as adjusted by Staff in Exhibits JAC-A and JAC-B.